2011

ANNUAL OPERATING PLAN

for

FISH PRODUCTION PROGRAMS

in the

CLEARWATER RIVER BASIN

by

U.S Fish and Wildlife Service

Idaho Department of Fish and Game

Nez Perce Tribe Fisheries

March 1, 2011

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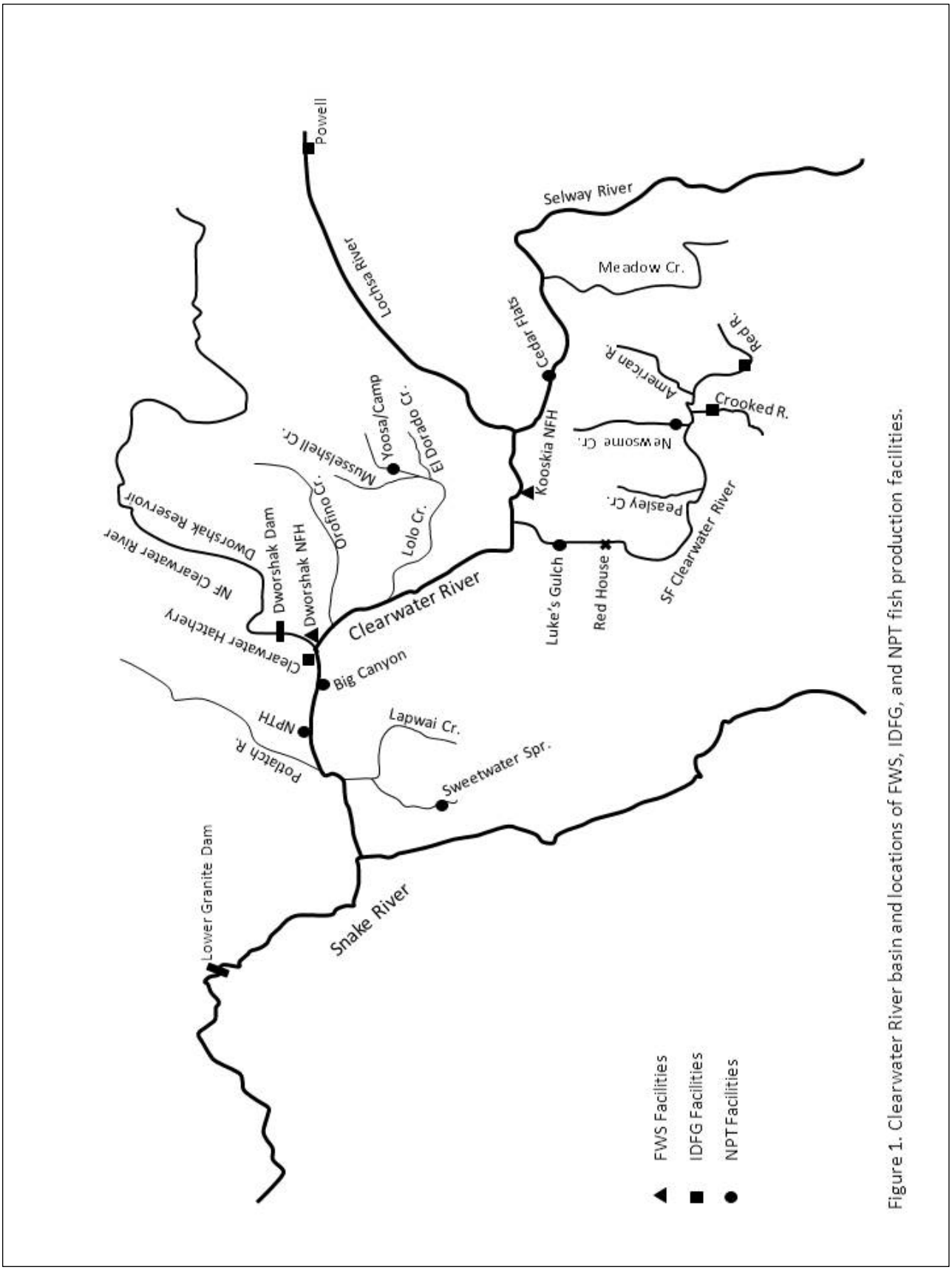

Figure 1. Clearwater River basin and locations of FWS, IDFG, and NPT fish production facilities.

CLEARWATER BASIN ANNUAL OPERATING PLAN (AOP) 2011
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(Each section lists a contact for additional information, coordination, or notification – contact information is listed in Section 9, pg. 41)

1. STEELHEAD

Hatchery program	Broodstock Needs	Production Goal	Adult Return Goal
Dworshak	2,300	2,100,000	20,000
Clearwater - (Dworshak B)	550	633,000	14,000
Magic Valley- (Dworshak B)	850	N/A to Clearwater AOP	N/A to Clearwater AOP
Dworshak Total	**3,700**		
SF Clearwater brood	120	210,000	in Clearwater's 14k goal

Program details are listed in the pertinent sections below.

1.1. Broodyear 2010 Steelhead

1.1.1. Dworshak – *Broodstock need for Dworshak mitigation is ~2,300 fish, this number of steelhead is needed to provide enough males to allow a 1:1 spawning ratio for the 630 females needed for egg collection. (An additional 2,000 fish are needed to provide eggs for Clearwater and Magic Valley Hatchery steelhead programs.) Male to female return ratio for two ocean steelhead at Dworshak is typically 1:3, so to collect enough males, more females than needed are collected and then excess steelhead are typically outplanted for natural spawning. This number includes jacks, accounts for pre-spawning mortality, and the 500 steelhead that are collected in the fall to cover the early returning, early spawning component of the run. This brood level provides ~2.1 million smolts at an average of 80% eyed egg-to-smolt survival to meet the adult return goal of 20,000 to the Clearwater River. The program goal for SF Clearwater releases stated in the harvest agreement between the States, Tribes, and Federal parties is 533,000 un-clipped steelhead. The agreement of releasing un-clipped fish is to offset reductions in down-river Tribal fisheries. The principle is that the returning un-clipped adult steelhead will escape the sport fishery therefore return at a higher rate to tributaries, to hopefully spawn, thereby increasing natural production.*

1.1.1.1. Production status - As of January 1, 2011 there were a total of 2.27 million steelhead on station, averaging 105 to 185 mm total length, depending on take, 9.7 fpp. Sample counts are performed monthly on representative ponds. *Thomas Trock*

Projected release – We are planning to release fish approximately 3 weeks early in 2011 to diagnose and repair a leaking valve in the pumped river water supply line. The repair requires a shutdown to access the valve. Offsite releases are planned to occur the week of March 21, 2011, and onsite releases are planned for the week of March 28. DNFH expects to release 1.2 million steelhead on-site and 1 million off-site. If weather interferes with transport of the fish during the week of March 21st, the Corps may be able to have the trucks return early during the week of March 28 to haul these fish. The off-site release includes 170K un-clipped

steelhead, 60,000 of these are destined for Lolo Creek and will be held on reservoir water (in System I) until mid-April then hauled by the Nez Perce Tribe. There is not sufficient reservoir water to hold the 110,000 un-clipped fish destined for Peasely Creek so these will be transported by the COE along with the other off-site releases. Average total length at release is estimated at 190 mm (7.5 fpp). (**Table 1**) *Thomas Trock / Mark Drobish*

1.1.1.2. Fish health status – Other than IHNV occurring at the 42% rate in the adults, no significant pathogens were detected during spawning. In April, 2010, one tank in the nursery was found positive for IHNV and was destroyed. On Sept. 3, two Burrows ponds were found positive for IHNV which was the first documented isolation of a 2010 IHNV/Coldwater Disease event in juveniles. Due to the fact that his outbreak occurred in fish that had originally been ponded on river water and had high mortality, these fish were destroyed. Subsequent to this outbreak, about 10 more burrows ponds were found positive for IHNV once river and reservoir water sources were mixed in system 1 but were of a low mortality, chronic nature and were not destroyed. Gas bubbles were seen in the gills of fish during the summer and early fall. No reuse is planned for the BY 10 STT this year. Many ponds have been treated with formalin for Trichodina and/or Gyrodactylus infections, common parasites in the winter. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. *Marilyn Blair*

1.1.1.3. M&E – Nine CWT groups of 15 or 30k each (see below) will be tagged for system contribution and early return groups. Also 30,500 PIT tags will be inserted; 1,500 for the Smolt Monitoring Program, 9,000 for CSS, and 20,000 for Dworshak evaluation. Prior to release 1,000 fish from each CWT-tagged pond are checked for tag retention (ex. BY07 = 96.4%). Also fish will be checked for LV, RVand AD clip quality. *Chris Peery / Carrie Bretz*

1.1.1.4. Research Requests – FPC requested 1,500 steelhead be PIT tagged for the Smolt Monitoring Program. For 2010 releases 9,000 steelhead were PIT tagged for the Comparative Survival Study (CSS).

Evaluation of LV survival and tag retention – *Goal:* We are assessing our ability to estimate CWT retention and the survival of steelhead that have received a CWT or CWT/LV clip. Steelhead in six burrows ponds received either a CWT/LV or RV mark, while all steelhead in three ponds received 100% CWT/LV marks. All fish were also AD clipped. Mortalities of steelhead in these nine ponds will be tracked to determine if differential survival occurs among the marked groups. In September of 2010, one study pond (BP 70) containing CWT/LV broke with IHN and all fish were killed to prevent spreading the virus. Prior to release in spring 2011 we will sample these ponds to determine tag retention.

Evaluation of Mixed-Cell Fish Rearing Pond at Dworshak National Fish Hatchery **–** *Goal:* We are evaluating the effectiveness of a modified mixed-cell pond to improve rearing conditions and adult returns for steelhead at Dworshak National Fish Hatchery. *Study objectives.*1) Evaluate growth, condition and survival of juvenile steelhead reared in a modified mixed-cell pond. 2) Evaluate adult returns for steelhead reared in modified mixed-cell pond. 3) Evaluate efficiency of use of a modified mixed-cell pond to rear juvenile steelhead. We are also evaluating ease of using the new pond design. The evaluation had started, however, there was a power outage on November 16, 2010 and all 57,423 steelhead in the two mixed cell ponds were lost. This was the second year of a planned 3 year study. *Chris Peery*

1.1.2. Clearwater - *Original design memorandum shows the production goal may be as high as two million steelhead smolts. Historically, the steelhead smolt releases from Clearwater Fish Hatchery have ranged from approximately 600K to 1.04 million. Adult return goal for the program is 14,000 steelhead above Lower Granite Dam.*

1.1.2.1. Production status / projected release - The estimated number of BY10 steelhead to be released in the spring of 2011 is 878,000. 523,000 AD-clip and 355,000 no ad-clip into the lower SF Clearwater pursuant to the US v. Oregon 2008-2017 Management Agreement. No steelhead will be released into the upper SF Clearwater River tributaries in 2011. IDFG will contact NPT (Sherman Sprague) to coordinate Newsome Creek releases. Beginning with BY10, CFH chose to release raceway 11 East entirely at Peasley Creek rather than split the raceway between Peasley Creek and Red House Hole. The production goals for Peasley Creek will increase from 250,000 to 291,000 and Red House Hole will decrease from 260,000 to 219,000. (**Table 1**) *Jerry McGehee / Cassie Sundquist / Lars Alsager*

1.1.2.2. Fish health status - For Egg Disease Certification, all females are sampled (individually) for viral replicating agents. Initial incubation of eggs for CFH occurs at Dworshak Fish Hatchery. Eggs from any females that test positive for viral replicating agents are destroyed, and only eggs that test negative for IHNV are taken to CFH. Juvenile rearing inspections are performed quarterly by Eagle Fish Health Lab. No prophylactic treatments are used during steelhead rearing. No pathogens detected to date on inspection sampling. Diagnostics on demand. Pre-liberation samples performed on 60 fish sample prior to release. Viral pathogens have not been detected in these fish. *Doug Munson*

1.1.2.3. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken three times during the final rearing cycle, during marking as fish are move outside, at the end of October and 2 weeks prior to release. Seven weeks after marking and just prior to release 300 fish are sampled to quality check adipose fin clips and coded wire tag retention. In February 33,900

steelhead will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate a combined adult escapement back to Lower Granite Dam. This is also a cooperative effort with the CSS study to evaluate transport and in-river SARs. PIT tags are distributed across release groups in proportion to the release group size. *Jerry McGehee / Carl Stiefel*

SF Clearwater Localized Stock Evaluation- PIT tags will be used to evaluate the relative performance of progeny from fish returning to the South Fork Clearwater River (SF Clearwater Localized Stock) and Dworshak NFH. Approximately 12,000 juveniles from each group will be PIT tagged to evaluate SARs. Juveniles from these two groups will be adipose-clipped. Managers have decided that these fish will be released at Peasley Creek instead of Red River (**Table 3**). *Jerry McGehee / Carl Stiefel*

CWT Tag Retention- Short- (three weeks post tagging), moderate- (seven weeks post tagging), and long-term (prerelease) retention estimates will be evaluated to determine if they have comparable results. A 300 fish sample from raceways which are 100% CWT will be checked for tag retention. *Carl Stiefel*

1.2. Broodyear 2011 Steelhead

1.2.1. Dworshak

1.2.1.1. Projected adult return - Based on average return rates, the predicted steelhead return to Dworshak NFH rack in 2009-2010 is sufficient to provide broodstock for all programs. We open the ladder to only capture what broodstock we need and we typically collect about 3,400 - 4,000 steelhead. *Howard Burge / Chris Peery*

1.2.1.2. Ladder operation - The ladder was opened 3 days in October and November for collection of early-return steelhead. During this period there were 720 early-run steelhead collected for spawning in the spring of 2010. When crowding holding pond 9 on October 14, 2010, the fish were hit with an electrical shock that went through the crowder killing approximately 30 adults. Delayed mortality has continued; however, we still have over 500 adults representing the early returners of the run. There were 422 excess adult steelhead trapped during the October-November trapping of fall SST for spawning. The Idaho Fish Health Center has lethally sampled 15-17 adult SST on six different occasions beginning in October through January, 2011, quantifying the prevalence of IHNV. There were an additional 674 excess SST trapped during this sampling. All excess SST were outplanted to the mainstem of the Clearwater River at the Ahsahka boat ramp upstream of the hatchery. There were also four rainbow trout trapped and outplanted. There were 22 coho jacks, 24 males and 40 females trapped and transferred to Kooskia NFH for spawning

along with 43 jacks outplanted. Based on the steelhead returns we are planning on intermittent ladder operation in the spring of 2011 to prevent excess fish collection. This also keeps steelhead in the river where they are available for sport and tribal harvest and allows us to spawn fish that have not been held in the hatchery for more than a few days. Ladder operation may be modified in-season if weekly goals are not met. The ladder will be reopened February 18, 2011 to begin the collection of mid and late returning steelhead. *Thomas Trock*

1.2.1.3. Adult fish health – 72 males were injected with the hormone GnRHa prior to spawning, using the implant form, under INAD. This was to insure that there were enough males that were ripe during the first two spawns. Fish are treated three times per week with formalin for fungus, under a veterinary prescription. At spawning, a minimum of 60 tissues samples will be collected and assayed for viruses, bacteria, and parasites. About 30% of ovarian fluid samples/take will be collected individually (not pooled) to assay for virus. In addition to samples taken during spawning, adults will also be sampled for IHNV as soon as possible as they return to Dworshak NFH throughout the adult run in order to obtain a better idea of the numbers and timing of returning adults that have IHNV in the river and the genotype of this virus. Beginning on 10/28/2010 for every 2 weeks tissues from 15 adults were sampled for IHNV. Detections to date include 6.7% positive for IHNV from samples collected on 1/6/11 and 13.3% positive from samples taken on 12/29/10. *Marilyn Blair*

1.2.1.4. Adult outplanting/marking – Ladder opening for collection of spring returns is not planned until February 18. Any fish beyond what is needed for spawning will be directly returned to the river. All released fish will be marked with left opercle v-notch. Any outplanting involving the NPT will be coordinated with Mike Key. *Carrie Bretz / Chris Peery*

1.2.1.5. Carcass disposition - This year there will be no food-processing of SST carcasses or research groups to utilize the carcasses. The Food Bank was contacted regarding passing fish out to the public. Initial discussion have occurred and we are tentatively planning on supplying fish to the public (The food bank will make contact with folks on their list first) and we'll plan to for this beginning February 22nd and continuing on March 1st, 8th, and 15th. If there is still an interest from the public, we may continue beyond the 15th; however, there are concerns regarding flesh quality for the later part of the run. Regarding any fish not utilized by the public through the food bank, we propose to return these carcasses to the Clearwater River with approximately 50 percent going in at the Orofino Bridge and 50 percent at the Greer Bridge. Any fish that have been exposed to hormone treatments (GnRHa) will be disposed at the transfer station. In the spring, spawning efforts are with fresh fish collected via the Dworshak ladder with the exception of some males that have been held over from previous collections to better achieve the 1:1 male:female spawning ratio. Any males treated with formalin will be included in the

group of fish to be disposed of in the Clearwater River. *Thomas Trock / Mark Drobish*

1.2.1.6. Adult M&E – System contribution, and early return CWT are being recovered for all three age classes. Returning adults are measured and examined for gender, various clips, tags, and marks then sorted for spawning or holding. *Carrie Bretz / Chris Peery*

1.2.1.7. Spawning/egg take plans, mating protocol - Current plans are to take ~2.7 million eyed eggs for Dworshak, ~1.2 million green for Clearwater. Included in this number are ~300K eggs from the South Fork of the Clearwater River localized broodstock program. Dworshak will also take ~1.3 million green for Magic Valley. Potlatch will receive approximately 18,000 green eggs. Similar to last year, Dworshak is cooperating with CRITFC and the Nez Perce Tribe in a Kelt Reconditioning Project. Additionally, the NPT will attempt to air-spawn 90 females in the spring of 2011 for the kelt project. Dworshak will incubate eggs from 15 air-spawned females from Take 1 and incorporate these eggs if needed into its program and also incubate eggs from 75 air-spawned female on Feb 1. These eggs will be transferred from Dworshak to the NPT on March 7. *Thomas Trock*

1.2.1.8. Juvenile Production - Incubation: Dworshak will incubate eggs from approximately 570 steelhead females for its program, 150 fall-return adults including 15 air-spawned females for the NPT/UI kelt program and 420 from winter and spring returns. After eye-up and enumeration, approximately 2.7 million eyed eggs will go into the Dworshak program. Dworshak will also provide incubation space for up to 1.2 million green eggs for Clearwater Fish Hatchery and 500K for the kelt program. *Thomas Trock*

Nursery Rearing: Dworshak will early-rear approximately 2.5 million steelhead in its nursery until the fish reach approximately 100 fpp during the spring and summer of 2011. *Thomas Trock*

Outside Rearing: Approximately 2.4 million steelhead will be moved from nursery tanks to outside burrows ponds from the end of May until September 1, 2011. Up to 78 Burrows ponds will be used for steelhead rearing; additionally the two Burrows ponds modified into mixed cell units will be utilized. Five Burrows ponds will be used to rear BY10 Coho. Fish will be moved from the nursery to the ponds using a Heathro Fish Pump. A marking trailer from Columbia River Fisheries Program Office will AD clip and CWT steelhead. The Burrows ponds will be initially stocked at approximately 100K fish/pond. Most steelhead will receive an adipose-fin clip to designate it as a hatchery fish, the exception being the 200,000 unclipped/unmarked South Fork releases.

Early rearing occurs in the nursery on reservoir water. With the exception of one tank of fish in 2010, IHNV has not been a recent factor in mortality during this early life stage. After the fish are moved from the nursery tanks, initial stocking will be in System I, also on reservoir water. This

will be the second year of utilizing System I for extending the reservoir water usage to better manage against IHNV by delaying exposure to river water. Current plans are to utilize reservoir water in a single pass mode (no reuse). Basic changes from the strategy in 2010 to 2011 are that all steelhead will go from the nursery into System I and none of these fish will go from the nursery into Systems II or III and be placed on river water. As density and flow levels increase in System I, the steelhead will be moved into Systems II and III using the Heathro Fish Pump in conjunction with the Vaki Micro Fish Counter to inventory these fish into ponds where they will remain until release. *Thomas Trock / Mark Drobish*

1.2.1.9. Juvenile Fish health - Upon ponding, juveniles will be monitored for viral and bacterial pathogens, and parasites. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. *Marilyn Blair*

1.2.1.10. Planned juvenile marking & tagging, release sites – Tentative marking plans for BY10 steelhead at Dworshak NFH are found in **Table 3**. The number of BY11 steelhead to receive a CWT is tentatively set at 180,000. FWS is not planning to administer an LV fin clip to CWT steelhead in 2011. How CWT retention rates are determined and if additional fish need to receive a CWT, is dependent upon the outcome of the LV study and other viable options. *Howard Burge / Chris Peery*

1.2.1.11. Juvenile M&E - FWS will be CWT 180,000 steelhead total from the three systems and early return progeny. Additional steelhead will receive PIT tags; 1,500 for SMP, 9,000 for CSS, 20,000 for Dworshak evaluation and 20,000 for the mixed-cell study. *Carrie Bretz / Chris Peery*

1.2.1.12. Research Requests –

- Rolf Ingerman, U of Idaho requested 3-5 ml of milt from 20-30 males for sperm subpopulation research. *Thomas Trock*
- Matthew Campbell, IDFG requested fin clip samples from all adult steelhead spawned at Dworshak (for all programs). He is heading up the parentage-based genetic tagging program for IDFG. This involves the annual genotyping of all broodstock at each hatchery, creating a parental genotype database. Progeny from any of these parents (either collected as juveniles or returning adults), if genotyped, could be assigned back to their parents, thus identifying the hatchery they originated from and exact brood year they were produced in. *Chris Peery / Ray Jones*
- Starting in 2009 Dworshak is cooperating with the University of Idaho in a Kelt Reconditioning Project. The University of Idaho is collecting blood and tissue samples from 10 females and 20 males representative of the early returning adults collected in October. The university will collect additional blood and tissue samples from adults spawned in the middle and later portions of the run. *Christine Moffitt / Zach Penny / Mark Drobish*
- NPT and CRITFC are also involved in kelt research and will be air spawning in conjunction with spawning efforts at DNFH. A total of 15 females will be air-spawned from the early-return steelhead. The

resulting eggs may be incorporated into DNFH production. An additional 75 females will be air-spawned from late-return steelhead. New fish will be collected via the ladder prior to February 1, 2011 to help ensure the best fish possible are utilized to maximize the potential for success of the kelt project. The resulting eggs from these fish will be outplanted as eyed-eggs placed into artificial redds in select locations in the Lolo Creek drainage. Outplant locations and transport permits have been approved by IDFG. An additional 150 steelhead kelts will be collected at Lower Granite Dam (LGR) and transferred to DNFH. Reconditioning experiments will be conducted from March through October at DNFH. Surviving kelts will be tagged and returned to the Snake River below LGR. *Scott Everett / Andrew Pierce / Mark Drobish*

1.2.1.13. Communication FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.

1.2.2. Kooskia

1.2.2.1. Weir/trap operation - The adult trap will be opened early to mid-March 2010 for BY11 steelhead adult collection. The proposed operation is to close the trap April 10, after Chinook and coho smolt releases, and bypass the water intake and Obermeyer weir during this usually high water period. We would reopen the trap on May 15-16. During this dewatered period we would open the picket (fish) weir to allow passage of steelhead, since they could not be trapped anyway. The NPT and IDFG are also interested in operation of the weir and will be kept informed. *Howard Burge*

1.2.2.2. Adult handling/outplanting/marking - All natural (unmarked) fish will be passed upstream of the weir. CWT steelhead will be sacrificed for tag recovery. Adult hatchery steelhead (not taken for CWT) for outplanting will be loaded into NPT truck at time of sorting; NPT contact will be Mike Key for spring outplants. Outplanted steelhead will be given a right opercle v-notch. Any Tribal requests for steelhead will be coordinated through Nancy McAllaster, NPT (208-843-7320 ext.2126). Other native species (bull trout, suckers, whitefish etc.) trapped will be passed upstream above the weir. *Carrie Bretz / Chris Peery*

1.2.2.3. M&E - Returning adults are measured and examined for gender, various clips, tags, and marks then sorted for spawning or holding. CWT steelhead will be sacrificed for tag recovery. No steelhead evaluation is planned at Kooskia at this time. *Carrie Bretz / Chris Peery*

1.2.3. Clearwater

1.2.3.1. Clearwater Hatchery – BY11 smolt release has been set at 843K including 360K for tribal supplementation. 1,206,000 green eggs are requested for Clearwater Hatchery. **Table 2**. All spawning will occur at DNFH. Our expected first spawn date for Clearwater Hatchery egg collection is March 9. Spawning occurs on every Tuesday. When possible 1:1 male:female spawning will be used. On spawning days, eggs taken for CFH and Magic

Valley will be from fresh fish that have entered DNFH trap since the last spawning day or fish that were green (not ripe) on previous spawning days and returned to the holding pond. Incubation to eyed stage of eggs destined for CFH production will occur at Dworshak Hatchery. All eggs from positive IHNV parentage will be culled at this point. At Dworshak Hatchery, the eggs will be shocked and then transferred to Clearwater Hatchery where they will be disinfected and placed in Heath egg trays. They will be picked and enumerated the next day. The eggs will then be placed in Heath egg trays for the remaining incubation period. The fry remain in the indoor vats until they are approximately 100 fish per pound. Each vat is loaded with approximately 45k swim-up fry. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

1.2.3.2. SF Clearwater Broodstock - In the spring of 2011 managers will continue to create a locally adapted steelhead broodstock in the South Fork Clearwater River by assessing the feasibility of collecting, spawning, and rearing the progeny from B-Run steelhead returning to the South Fork of the Clearwater River. PIT tags will be used to evaluate the relative performance of progeny from fish returning to the South Fork Clearwater River and Dworshak NFH.

Project Objectives

- Clearwater Regional staff will coordinate with anglers to collect up to 50 pairs of adults for spawning.
- Clearwater Hatchery staff will operate transport trucks (two, 1 ton truck with transport tanks) and haul adults to Dworshak NFH.
- Adult holding and spawning will occur at Dworshak per protocol mentioned in 1.2.3.1. This will include coordination with IDFG staff for spawning, disease sampling, and testing of samples.
- DNFH will hold the eggs to eye up and culling for diseased eggs. They will then be shipped to Clearwater Hatchery for rearing.
- Clearwater Hatchery will rear 210,000 FTS in three raceways for outplanting to Peasley Creek on the SF Clearwater River.
- Approximately 12,000 juveniles from each group will be PIT tagged to evaluate SARs. Juveniles from these two groups will be adipose clipped. Managers have decided that these fish will be released at Peasley Creek instead of Red River (**Table 3**). *Jerry McGehee / Cassie Sundquist / Lars Alsager*

1.2.3.3. Magic Valley - 1,420,400 green eggs are requested for Magic Valley. **Table 2**. Our expected first spawn date for these hatcheries is March 23. Eggs are taken to CFH Isolation Incubation each spawning day where they are held until certification of disease status. The isolation incubation building will be used to house and incubate the Dworshak B strain steelhead eggs destined for Magic Valley. Eggs will be received on three different spawning days and held until the fish pathology lab determines virus results. Each female will be tested for viral replicating agents. At that time, positive IHNV eggs will be destroyed and the negative eggs will

be picked, enumerated, and shipped to Magic Valley. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

1.2.3.4. Fish health – Each female spawned at Dworshak NFH (eggs to be reared at Clearwater Hatchery) will have ovarian fluid sample taken and shipped to Eagle Fish Health Lab, and tested for viral replicating agents; only negative tested eyed eggs are transferred to Clearwater Fish Hatchery main incubation for rearing at CFH. Tissues samples (kidney/spleen) will be from at least 30 females. All eggs from virus positive females will be culled from production. Juvenile rearing inspections will be performed each quarter and diagnostic examination on demand by Eagle Fish Health Lab. Pre-liberation inspections will also be performed on a 60 fish sample within 45 days of liberation. No prophylactic treatments are planned at this time. *Doug Munson*

1.2.3.5. Marking plans - Plans for BY11 steelhead from Clearwater hatchery are found in **Table 3**. As fish are moved outside, they receive ad-clips and test groups receive CWT's. Fish will remain there until they are full smolt size and age, maximum of 4.5 to 6.0 fish per pound. (Raceways are loaded with approximately 50,000 -70,000 fish). In February or March, approximately 33,900 fish will be PIT tagged to evaluate juvenile emigration timing and survival from release to Lower Granite Dam for each release group and to estimate a combined adult escapement back to Lower Granite Dam which will be used to estimate SARs. This tagging is also a cooperative effort between CSS and LSRCP. PIT tags will be distributed across release groups in proportion to the release group size. *Tom Rogers / Carl Stiefel*

2. SPRING CHINOOK SALMON

Hatchery program	Broodstock Needs	Production Goal	Adult Return Goal
Dworshak	1,000	1,050,000	9,135
Kooskia	800	600,000	5,200
Clearwater - Powell	Included in Kooskia's 800 Broodstock Need	235,000	12,000
	766	800,000 300,000 parr	
Clearwater - Red/Crooked R.	940	1,300,000	
Clearwater Total	**1,706**	**2,635,000**	
NPTH - onsite	in Red/Crooked R's 940 Broodstock Need	200,000	1,176
NPTH - Meadow Creek	292	400,000	
NPTH - Lolo Creek	110	150,000	
NPTH - Newsome Creek	56	75,000	
NTPH Total	**458**	**825,000**	

Program details are listed in the pertinent sections below.

2.1. Broodyear 2009 Spring Chinook

2.1.1. Dworshak – *Approximately 1,000 Chinook are needed for broodstock for the Dworshak spring Chinook salmon program. This number includes jacks and*

accounts for pre-spawning mortality. This brood level will provide 1.5 million green eggs and 1.05 million smolts at an average of 89% eyed egg-to-smolt survival to meet the adult return goal of 9,135 to the river above Lower Granite Dam.

2.1.1.1. Production status - On January 1, 2011, there were 1,082,942 BY09 spring Chinook averaging 26 fpp and 128 mm (5.0 inches) total length on station. At present, these fish appear to be on schedule to meet the size-at-release requirements of 18–20 fish per pound. *Thomas Trock*

2.1.1.2. Projected release – Approximately 1,075,000 spring Chinook will be released (forced out of raceways) on two consecutive evenings from A and B banks the week of March 21 due the need to repair a major leak in the main water line. Typically prior to release we consider of a number of environmental factors like: flows, turbidity, and an increasing hydrograph – to give fish as much cover from predators as possible (**Table 4**). *Thomas Trock*

2.1.1.3. Fish health – 29% of the adult SCS sampled were positive for IHNV. BY09 SCS have done very well to date. Monthly monitoring samples for BKD are currently being taken. A pre-release exam of 60 fish will be sampled for viral and bacterial pathogens prior to release. *Marilyn Blair*

2.1.1.4. M&E - Approximately 120,000 Dworshak stock are CWT for system contribution monitoring. Prior to release 500 marked fish from each coded-wire tag code are checked for tag retention (BY08 = 98-100 %). *Carrie Bretz* / *Ray Jones*

2.1.1.5. Research Requests –

- 52,000 Dworshak spring Chinook salmon are PIT tagged by the FWS Columbia River Fisheries Program Office (Vancouver) for Dworshak's contribution to the Comparative Survival Study (CSS). *Ray Jones*

2.1.2. Kooskia - *Approximately 800 Chinook (includes 200 for Clearwater's Powell program) are needed for broodstock for the Kooskia spring Chinook salmon mitigation program. This number includes jacks and accounts for pre-spawning mortality. This brood level produces 600,000 smolts for the Kooskia program at an average 80% eyed egg-to-smolt survival.*

2.1.2.1. Production status - There are 657,747 Kooskia stock spring Chinook fry at Kooskia NFH weighing 23,229 lbs, 4.90 inches or 124 mm long, at 28.3 fish/lb (fpp). The Burrows ponds were put on Clear Creek water October 13, 2010. Chinook will be split from Burrow's ponds into raceways in February, 2011 if densities warrant. *Kent Hills*

2.1.2.2. Projected release - KNFH will direct release an estimated total of 657,000 Spring Chinook at 25-30 fpp on or after the last week in March. (**Table 4**) *Kent Hills*

2.1.2.3. Fish health – 40.5% of adult SCS sampled were positive for IHNV. Treated for *Ich* in mid-summer 2010. By late summer, cooler water (chilled) cleaned up the fish enough that treatments were no longer required. Monthly monitoring samples for BKD are currently being taken.

A sample of 60 fish will be taken and assayed for virus and bacteria prior to release. *Marilyn Blair*

2.1.2.4. M&E –Prior to release 500 marked fish from each mark group (tag code) are checked for tag retention (BY08 = 98 %). 15,000 Chinook will be PIT tagged for the 2011 release for juvenile and adult monitoring. Most of these PIT tags (14,000) will be requested to be handled in a monitoring mode at the dams with 1,000 in the default return to river mode. *Carrie Bretz / Howard Burge*

2.1.3. Clearwater - *Approximately 1,706 Chinook (plus and additional 200 collected at Kooskia) are needed for broodstock for the Clearwater Fish Hatchery spring Chinook salmon program. This number includes 766 for Powell (+200 collected at Kooskia), 940 for the SF program and also accounts for pre-spawning mortality. Original design memorandum shows the production goal may be as high as three million Chinook smolts. Historically, Chinook releases from Clearwater have ranged up to approximately 1.98 million smolts, 1.65million presmolts and 1.0 million parr. Adult return goal for the program is 12,000 adult Chinook over Lower Granite Dam.*

2.1.3.1. Production status/transfer date/projected release – Planned releases of BY09 spring Chinook smolts are for 2,235,000 at an expected 16-20 fish per pound (139,688 pounds of fish). Fish will be released from transportation trucks at designated release sites. The final release number is determined by subtracting monthly fish loss from the inventory at the time of Ad clipping. Red River and Powell acclimation ponds will be watered up by the third week of March. Beginning with BY08 the Crooked River Spring Chinook release of 700K was transferred to Red River in preparation for the future Summer Chinook program at Crooked River. Fish will be transported to each facility and placed in the ponds during the last week of March to first week of April, release adjustment will be made depending on ice conditions. Smolts are then released directly from the ponds. At Red River and Powell non-acclimated smolts will be released directly from the ponds daily at sunset. Brian Leth recommended that we hold smolts in ponds as long as the Hatchery Manager was comfortable for the fish to be safe and then release the same day. All production Chinook are Ad clipped. During the fourth week of March NPT will transport approximately 400,000 smolts to the Selway River for release near the mouth of Meadow Creek. Selway transport should be coordinated with Steve Rodgers and Clear Creek release coordinated with Kent Hills (**Table 4**). *Jerry McGehee / Cassie Sundquist / Lars Alsager*

2.1.3.2. Fish health – Brood Powell Spring Chinook: IHNV was detected in 20/60 pools (3 fish per pool) of ovarian fluids (60 fish sampled). These positive detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 3 Highs (1.2%) out of 242 fish sampled. Eggs from females with high ELISA values were culled from the Clearwater Chinook salmon program. Prespawning mortality was at 5.25%.

Broodyear 2008 Powell: Pathogens have not been detected in these fish to date during routine sampling.
Brood S. F. Clearwater Spring Chinook**:** IHNV was detected in 5/60 pools (3 fish per pool) of ovarian fluids. These positive detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 33 Highs (5.4%), out of the 607 females sampled. Eggs from females with high ELISA values were culled from the Clearwater Chinook salmon program. Prespawning mortality was at 4.5%.
Broodyear 2008 S. F. Clearwater Spring Chinook**:** No pathogens have been detected during routine sampling.
Juvenile

- Rearing inspections – Quarterly inspections are performed by Eagle Fish Health Lab. No pathogens detected in regular monthly inspections. Steatitis and an advanced anemia caused elevated mortalities in the BY09 Chinook salmon reared at CFH. Otherwise neither acute nor chronic mortality was observed.
- Pre-liberation inspections – (60 fish/stock) These inspections are performed by Eagle Fish Health Lab within 45 days of release. *Doug Munson*

2.1.3.3. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken three times during the final rearing cycle; during marking as fish are moved outside, at the end of October, and two weeks prior to outplanting. Seven weeks after marking and just prior to release 300 fish are sampled to quality check Ad clips and CWT retention. In February and March of 2011, 93,900 Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate an adult escapement back to Lower Granite Dam from each of the five major smolt release groups as well as to provide a tool for in-season harvest management (Table 4). Similar to the steelhead PIT tagging, this is a cooperative effort with the CSS study to evaluate transport and in-river SARs so PIT tags are separated by code with the majority of the tags representing the run-at-large and a smaller portion being default returned to the river during outmigration. PIT tags are representatively distributed across release groups. *Jerry McGehee / John Cassinelli*

2.1.4. Nez Perce Tribal Hatchery/Clearwater Hatchery

2.1.4.1. Production status - As of December 31, 2010, there were 253,320 BY09 spring Chinook averaging 28.5 fpp on station. These fish are being temporarily held in adult holding raceways during a river water supply pipeline repair, and will be transferred to the east and west "S" channels for final rearing sometime in January. Target size at release is 20 fpp.

2.1.4.2. Projected release – Beginning April 1, 2011, these fish will be allowed to leave volitionally for up to two weeks directly into the Clearwater River

from the "S" channels at NPTH. Forced release of remaining fish will occur by April 15, and will be determined based on river conditions and other hatchery operational factors. *Steve Rodgers* (**Table 4**)

2.1.4.3. Fish health – Fish are currently suffering from higher mortalities (751 mortalities in December) due to *Dermocystidium* and high levels of *Epitheliocystis* in the gills. Fish health examinations have revealed "heavy levels of *Scyphidia*, low levels of ICH, *Epitheliocystis*, *Glochidia* from freshwater mussels". Gill examinations have shown *Sanguinicola*, *Salmonicola* copepods, and *Glochidia*. A formalin bath treatment addressed many of these issues; however fish losses are still above normal. Hatchery staff and fish health are monitoring these fish aggressively, and additional treatments or actions may occur if necessary to reduce mortalities. Other tests still pending. Fish may be released early due to leak in pipe in water source. A pre-release exam of 60 fish has been sampled for viral and bacterial pathogens prior to release. *Marilyn Blair / Steve Rodgers*

2.1.4.4. M&E – These fish are 100% CWT'd, and 60K are also AD clipped. Up to 6,300 fish will be PIT tagged by NPTHC M&E staff prior to release for "monitor mode" (6,000) and SURPH survival to LGR (300). *Sherman Sprague / Steve Rodgers*

2.2. Broodyear 2010 Spring Chinook

2.2.1. Dworshak

2.2.1.1. Production status - All of Kooskia's BY10 SCS eyed eggs were shipped to Kooskia NFH during October, 2010. There were 1.12 million eyed eggs of Dworshak stock SCS which remained at Dworshak for incubation. On January 1, 2011, there were approximately 1.11 million Dworshak stock eggs/sac-fry incubating at Dworshak. In the spring of 2011, SCS fry at Dworshak will be transferred into the nursery before being moved to outside raceways. *Thomas Trock / Mark Drobish*

2.2.1.2. Fish health status –Adult IHNV prevalence was 2.8%. BY09 has experienced no problems to date. 60 fish will be sampled prior to release. *Marilyn Blair*

2.2.1.3. M&E - Approximately 120,000 Dworshak stock will be CWT in August for contribution monitoring (**Table 5**). Tagging plans also include 52,000 PIT tags for the Comparative Survival Study (CSS). The CSS is looking at adult survival of transported vs. non-transported and up-river vs. down-river releases. *Carrie Bretz / Howard Burge*

2.2.2. Kooskia

2.2.2.1. Production status - Kooskia stock BY10 spring Chinook eggs were taken from a total of 222 females spawned with a total of 150 males. This produced an estimated total of 777,000 green eggs. All Kooskia stock eyed eggs (737,000) were transferred from Dworshak to KNFH on October 18 - 26, 2010. Eggs were placed on chilled well water (approximately 41°F). Eggs were all hatched out by mid-January. Kooskia is carrying an additional 50,000 BY10 fry and these cannot be

reared to full smolts due to limited summer rearing space, these fry need to be removed by May 20, 2011. *Kent Hills*

2.2.2.2. Fish health status - Adult IHNV prevalence was 0%. BY10 has experienced no problems to date and 60 fish will be sampled prior to release. *Marilyn Blair*

2.2.2.3. M&E - Adult monitoring for the ISS will continue, as will monitoring of the Kooskia weir. Current plans are to CWT approximately 100,000 in August, 2011 for contribution (**Table 5**) and 15,000 Kooskia smolts will receive PIT tags in January, 2012. *Carrie Bretz / Howard Burge*

2.2.3. Clearwater

2.2.3.1. Production status – The proposed number of Clearwater Fish Hatchery fish to be allocated from brood year 2009 is 2.135 million smolts, 200k-220k pre-smolts for NPTH, and 300k parr. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

2.2.3.2. Estimated numbers/planned marking & tagging - All production Chinook are Ad clipped. Planned releases of BY10 Chinook are for 2,135,000 smolts 16-20 fish per pound. (This does not include 200K fish that will be transferred to NPTH in Sept 2011 but does include 235K for Clear Creek and 400k lower Selway River). The NPT will transfer the Clearwater stock fish to NPTH site 1705 during September 2011. Prior to marking NPT will provide wire for 100% CWT and 33% AD clips. 300K parr at 100 fpp will be released from transportation trucks at designated release sites. Red River and Powell acclimation ponds will be watered up and screens put in place by the third week of March each year. Beginning with BY09 the Crooked River Spring Chinook release of 700K was transferred to Red River in preparation for future the Summer Chinook program at Crooked River. Fish will be transported to each facility and placed in the ponds during the last week of March to first week of April release adjustments will be made depending on ice conditions. Smolts are then released directly from the ponds. At Red River and Powell non-acclimated smolts will be released directly from the ponds daily at sunset. All production Chinook are Ad clipped. NPT contact for transport is Steve Rodgers (**Table 5**). *Tom Rogers*

2.2.3.3. Fish health status – Brood Powell Spring Chinook**:** IHNV was detected in 0/90/ (sampled individually) of ovarian fluids and kidney/spleen tissues. ELISA sampling detected 1 High (0.4%) of the 209 females spawned. Eggs from the one female with a high ELISA value were culled from the CFH Chinook salmon program. Prespawning mortality was at 40% in 2010 due to a lightning strike hitting the brood pond.

Brood S.F. Clearwater Spring Chinook**:** IHNV was detected in 0/90 of ovarian fluids and kidney/spleen tissues. ELISA sampling detected 22 Highs (5.9%) of the 375 females sampled. Eggs from females with high ELISA values were culled from the CFH Chinook program. Prespawning mortality was at 7.5% in 2010.

Broodstock- Disease Sampling: When the females are spawned, kidney samples are collected from all females; ovarian samples are collected from

60 and kidney/spleen tissues from at least 30 females (viral replicating agent analysis) as well as head wedges from 20 fish for whirling disease testing. All samples are air freighted weekly to the Eagle Fish Health lab for analysis. Females are screened for BKD using ELISA techniques. Females with optical densities (OD) over 0.25 are culled.

Juvenile

- Rearing inspections – quarterly inspections are performed by Eagle Fish Health Lab
- Pre-liberation inspections – These inspections are performed by Eagle Fish Health Lab. *Doug Munson*

2.2.3.4. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken three times during the final rearing cycle; during marking as fish are moved outside, at the end of October, and two weeks prior to outplanting. Seven weeks after marking and just prior to release 300 fish are sampled to quality check Ad clips and CWT retention. In February or March 2012, approximately 100,200 Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate an adult escapement back to Lower Granite Dam from each of the five major smolt release groups as well as to provide a tool for in-season fisheries management (Table 5). *Jerry McGehee / John Cassinelli*

2.2.4. Nez Perce Tribal Hatchery *Approximately 458 spring Chinook salmon adults are needed for broodstock for the Nez Perce Tribal Hatchery spring Chinook program. This number does not includes jacks (goal for jacks is less than 5% contribution to production annually), and accounts for pre-spawning mortality. This brood level will provide for a target release of 75,000 presmolts from Newsome Creek (South Fork Clearwater River) acclimation facility, 150,000 presmolts from Yoosa/Camp (Lolo Creek) acclimation facility and 400,000 parr into Meadow Creek (Selway River).*

2.2.4.1. Production status – As of December 31, 2010 there are 899,015 sac-fry on hand at NPTH to meet production goals listed in Table 4. Based on a projected mortality of 10% from eyed egg to release, there is a surplus of approximately 180,000 SCS within NPTHC. Disposition of this potential surplus will be determined in February. Targeted 2011 release: (**Table 4**).

- 150,000 presmolts (acclimated) into Yoosa/Camp/Lolo Creek in October
- 75,000 presmolts (acclimated) into Newsome Creek in October
- 400,000 parr (direct stream) into Meadow Creek in June

The NPT will transfer Clearwater stock BY2010 spring Chinook from Clearwater FH to NPTH during early September 2011 (section 2.2.3.2). Fish will be reared in the NATURES "S" channels or linear raceways until late-March or early-April 2012 and released at approximately 20 fpp. *Steve Rodgers*

2.2.4.2. Estimated numbers/planned marking & tagging – Fish destined for release from acclimation facilities will be 100% marked (CWT) at approximately 160 fish per pound (2.52 g) at either NPTH or Sweetwater Springs. The Newsome Creek fish will be transferred to Sweetwater Springs in early spring to reduce densities at NPTH, and held there until early September. They are then transferred to the Newsome Creek AF in late August or early September for acclimation and final rearing. Lolo Creek fish will be held at NPTH until late August or early September and then transferred to Yoosa/Camp AF for acclimation and final rearing. For smolts being reared at Clearwater Hatchery NPT M&E staff will coordinate with IDFG for CWT and ad-clipping to occur at Clearwater Hatchery. These fish will be marked 36% CWT and Ad and 64% CWT only. Prior to release in April 2012 at NPTH, a portion of these fish will be PIT tagged by NPT. *Steve Rodgers*

2.2.4.3. Acclimation facility operations/release –

- Yoosa/Camp – Transfer of the fish will occur in late August or early September (when water temperatures cool). Prior to release, 9,000 fish will be tagged with a PIT tag. Volitional release will begin on approximately October 3, with all fish forced out by October 17, 2011. Target size at release is 34 fish per pound (13.3 g) **(Table 4)**.
- Newsome Creek – Transfer of fish will occur in late August or early September (when water temperatures cool Prior to release, 6,000 fish will receive a PIT tag. Volitional release will begin on approximately October 4, with all remaining fish forced out by October 18, 2011. Target size at release is 29 fish per pound (15.6 g) **(Table 4)**.
- Meadow Creek – Approximately 400,000 parr will be direct stream released into Meadow Creek in 2011. Prior to release, 10,000 fish will receive a PIT tag. On June 228-30, 2011 (tentatively), the spring Chinook salmon parr will be transported and direct stream released via helicopter into Meadow Creek, Selway River. Target size at release is 117 fish per pound (3.9 grams) **(Table 4)**. *Steve Rodgers*

2.2.4.4. Fish health status – 33.7% of the fish sampled were positive for IHNV. Eggs from 3 females were culled to bring all eggs to the status of being from females all under the ELISA O.D. value of .200. As of December 31, 2010 all 2011 production fry are hatched and incubating at NPTH. *Marilyn Blair / Steve Rodgers*

2.2.4.5. M&E -

- Tag retention and delayed mortality – Estimate CWT delayed mortality rates within 5 days of tagging. Estimate CWT retention rates 25-35 days after tagging and just prior to release. Estimate PIT tag retention rates and delayed mortality within 7 - 10 days of tagging.
- PIT survival studies- Estimate smolt survival rates and migration timing **(Table 5)**.
- Downstream migration – Operate rotary screw traps within Meadow Creek, Lolo Creek and Newsome Creek to monitor movement, timing, condition factors, and population estimates. *Sherman Sprague*

2.2.4.6. Communication - NPTHC produces monthly production and pathology reports, an annual operation plan and an annual operation report. Fish Research produces weekly weir reports, final weir summary report, spawning ground summary reports, and SURPH survival summary reports. *Steve Rodgers*

2.3. Broodyear 2011 Spring Chinook

Spring Coordination Kickoff Meeting will be scheduled for late March with weekly conference calls scheduled for Tuesdays (beginning in early May, 2011). Standardized report tables are developed to keep all parties updated, informed, and coordinated on in-season run development, harvest estimates, broodstock collection, priorities for excess broodstock, outplanting plans, etc…

2.3.1. Dworshak

2.3.1.1. Projected adult returns - Based on tribal harvest, sport harvest data, rack returns, and ocean conditions during emigration; the forecasted return for 2011 Dworshak adult spring Chinook to the Clearwater River is 3,168 fish **(Table 6a)**. Given this prediction FWS is optimistic that they will meet broodstock requirements. It's also likely IDFG and the NPT will open sport and tribal fisheries in the Clearwater River in the spring of 2011 after dam counts of PIT tagged adults verify the estimates. *Chris Peery / Howard Burge*

2.3.1.2. Ladder operation – Ladder opening will be heavily influenced by in-season run validation and timing. If possible and depending on in-season estimates, the agreement of co-managers is to utilize fish for tribal subsistence earlier in the return when they are in better condition, rather than later when they are unfit for human consumption. Snouts would need to be removed from CWT tagged Chinook prior to subsistence distribution. The adult return will be closely monitored and if good DNFH will wait until late June to early July to collect broodstock. *Howard Burge*

2.3.1.3. Adult outplanting / distribution plans – **Table 7a** lists the prearranged streams to receive adult spring Chinook salmon, table is updated with 2010 proposed limits. Outplanting will be coordinated between Mike Key (NPT) and Howard Burge (FWS). The earliest date the NPT trucks would be available for any outplanting is June 23. For outplants to the Upper Selway River, the truck will be loaded beginning at 6 AM to allow time for the trip. All adults outplanted from Dworshak will receive a left opercle v-notch as shown in **Table 7b**. *Howard Burge*

2.3.1.4. Carcass disposition – This year there is no food-processing of Chinook carcasses or research groups to utilize the carcasses. Therefore the carcasses would be destined for the landfill unless an outlet is found. As an alternative to the landfill, we propose the disposal of carcasses back into the Clearwater River; (50% at the Orofino Bridge and 50% at the Greer Bridge), to allow nutrient recycling. Any erythromycin injected females would be disposed of at the local landfill. Since adult Chinook salmon are collected throughout the summer and then spawned in August/September, they receive multiple formalin treatments and

therefore will not be offered for human consumption via the Food Bank. *Thomas Trock / Mark Drobish*

2.3.1.5. Adult M&E Returning adults are measured and examined for gender, various clips and tags, and marks then sorted for spawning or holding. *Carrie Bretz*

2.3.1.6. Spawning plans Dworshak will spawn 340-400 females for its program and 210-240 females for Kooskia's program. *Thomas Trock*

2.3.1.7. Egg Incubation All eggs taken for Kooskia and Dworshak will be initially incubated at Dworshak. After eye-up and enumeration, all of Kooskia eggs will be shipped to Kooskia for final incubation. Either all of Dworshak eggs will be incubated at Dworshak or a portion will be shipped to Kooskia for incubation over the winter. *Thomas Trock*

2.3.1.8. Fish health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples will be sampled for viruses. An additional 60 tissue samples will be taken for virus, bacteria, *Myxobolus cerebralis and C. Shasta*. Eggs from high and medium ELISA level females will be culled to the .250 ELISA O.D. level. *Marilyn Blair*

2.3.1.9. Communication FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.

2.3.2. Kooskia - *Starting in 2009 an additional 200 brood will be collected at Kooskia for a total of 800 broodstock. This brood level would produce 600,000 smolts for the Kooskia mitigation program and an additional 235,000 smolts, reared at Clearwater FH for release into Clear Creek.*

2.3.2.1. Projected adult returns - Based on 2008 draft tribal harvest, sport harvest data, and rack returns and ocean conditions during emigration; the 2010 forecasted return for Kooskia NFH spring Chinook to the Clearwater River is 279 fish **(Table 6a)** and IDFG estimates another 620 adults returning from the 2009 release of 234k smolts into Clear Creek. Given this prediction it's hopeful that Kooskia will meet broodstock needs. Additionally, given the agreement for backfilling Kooskia broodstock, IDFG and the NPT will likely open a sport and tribal fisheries in the Middle Fork Clearwater River area in the spring of 2011. This will be updated in-season as dam counts of PIT tagged adults update the estimates. *Chris Peery / Howard Burge*

2.3.2.2. Trap operation – Trap will be opened for Chinook collection around the 15th of May until warm water temperatures dictate its closure. All natural returning adults will be released upstream for natural spawning in accordance with ISS protocol. Returning adults collected for broodstock will be transported to Dworshak for holding until spawning. *Howard Burge*

2.3.2.3. Adult outplanting / distribution plans - **Table 7a** lists the prearranged streams to receive adult spring Chinook salmon. Chinook loaded for adult outplanting will be loaded directly into NPT trucks at Kooskia. Outplanting will be coordinated between Mike Key (NPT) and Howard Burge (FWS). All adults ouplanted from Kooskia will receive two right

opercle v-notchs as shown in **Table 7b**. Tribal use of un-anesthetized jacks for the elder program will need to be coordinated prior to adult sorting. (NPT contact Nancy McAllaster, 208-843-7320 ext.2126)

2.3.2.4. Adult M&E - Returning adults are measured and examined for gender, various clips, tags, and marks then sorted for spawning or holding. *Carrie Bretz / Howard Burge*

2.3.2.5. Spawning plans - Kooskia spring Chinook BY 11 adult broodstock will be kept at Dworshak NFH. Spawning normally occurs the third week of August. Eggs collected that are in the low range of the ELISA values will be kept and the medium to high eggs are discarded. Jacks will be utilized for ~10% of the spawners. *Kent Hills*

2.3.2.6. Egg incubation - BY11 Kooskia stock (750k) eggs will be transferred to KNFH beginning of October after eye-up. The new egg incubation recirculation system will be utilized. BY 2011 eggs will be incubated on that new recirculation system with chilled well water makeup, approximately 38-40°F. Normally eggs all hatch out by mid-January and are tanked mid-March. *Kent Hills*

2.3.2.7. Fish Health - Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples will be sampled for viruses. An additional 60 tissue samples will be taken for virus, bacteria, *Myxobolus cerebralis and C. shasta.* Eggs from high and medium ELISA level females will be culled to the .250 ELISA O.D. level. *Marilyn Blair*

2.3.2.8. Communication - FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.

2.3.3. Clearwater - *2011 broodstock collection may be reduced at Powell, if enough broodstock for the Clear Creek release are collected at Kooskia NFH.*

2.3.3.1. Projected adults returns – IDFG pre-season forecast of spring Chinook returning from Clearwater Hatchery releases is 4,129 for 2 and 3 ocean fish **(Table 6b)**. IDFG will use in-season assessments of overall run strength and returns to specific hatcheries based on analyses of counts and PIT tag detections at dams, to finalize sport harvest seasons and limits. The State sport fishery will be managed to stay within allowable incidental take of ESA listed populations and for 50% of the harvestable share of adult spring Chinook. Real time predictions will be used to adjust the share. *Sam Sharr / Tom Rogers*

2.3.3.2. Trapping operations at satellite facilities - Spring Chinook will be trapped at the Crooked River and Red River weirs, which will be installed for steelhead trapping, approximately the third week of March, prior to high water. Powell trap will go in around June 1. Trapping operations will continue until after September 1 and five consecutive days of zero fish are trapped. Proposed adult needs will be approximately 953 females and 953 males for Clearwater Hatchery allocations. NPT requested adult spring Chinook in excess of Clearwater broodstock requirements be available for broodstock at NPTH. Notify Steve Rodgers and Becky Johnson. If CFH manager predicts elevated prespawning mortality in holding adults,

hatchery manager will compensate for loss by taking and holding additional adult fish. If by commencement of spawning too many adults have been taken, then adult outplants will be implemented at locations and levels given in **Table 7a**. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

2.3.3.3. Adult outplanting / distribution plans - The outplanting protocol [for excess hatchery broodstock] provides for distribution for natural spawning and subsistence use. If adult Chinook, available for release into natural spawning areas, exceed the numbers agreed to in **Table 7a**, further consultation will occur. The general procedure for providing fish for subsistence will be first to tribal programs, then to charitable organizations. Jack Chinook may go to subsistence programs directly. Please see **Tables 8a** and **8b** for outplanting priority streams and marks. *Tom Rogers*

2.3.3.4. Spawning plans - Spawning ratios of 1:1 will be used unless the brood stock population is less than 100 females. If the spawning population is less than 100 females, then eggs from each female will be split into two equal groups. A different male will fertilize each group. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute. The two buckets will be poured together and continued through the spawning process. When brood stock population is 50 to 25 females, the eggs from each female will be split into three equal groups and each group fertilized by a different male. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute; then all three buckets will be poured together. When brood stock population is 25 females or less, the eggs from each female will be divided into four equal groups, each fertilized by a separate male. The process will be completed as previously mentioned to finish the spawning process. During the entire spawning year, at most five to ten percent of the jacks will be used during the spawning process. An effort will be made to use all returning fish for spawning. If presented with an excess number of one sex, gametes from individual parents may be subdivided and each part fertilized with gametes with different parents. The first sort will occur between August 5 and 10. All females will be sorted twice per week, and all ripe females will be spawned each time. Spawning will continue until all females are spawned. NPT assistance will be provided when spawning Chinook for NPTH. If too many eggs are taken for the hatchery program, these eggs can be used to backfill appropriate IDFG programs, other agency programs. If not needed, surplus eggs will be disposed. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

2.3.3.5. Juvenile production - Original design memorandum shows a production goal may be as high as 1.5 million Chinook smolts reared at the main facility, and 1.5 million fall release pre-smolts reared at the three satellite facilities. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

2.3.3.6. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that are identified at a level of 0.25

OD or higher will be culled. A 60 fish sample (ovarian fluids) and at least 30 kidney/spleen (tissue) samples will be taken for viral replicating agents. A 20 fish sample (head wedge) will be taken for *Myxobolus cerebralis* analysis. Juveniles will be inspected on a quarterly basis. Diagnostics on demand. Pre-liberation samples prior to release at satellites (60 fish sample). *Doug Munson*

2.3.4. Nez Perce Tribal Hatchery

2.3.4.1. Projected adult returns - Projected adult returns estimates to Lolo and Newsome creeks are 117 and 70, respectively **(Table 6c).** At the present time, there are no adult return estimates for Meadow Creek. The 7 year mean of capture efficiency at our Lolo Creek Weirs is 28%, for Newsome Creek it is 82%. The total number of returning adults we expect to capture at our Lolo and Newsome Creek weir sites are 33 and 57, respectively. Broodstock needs are: 110 adults for Lolo Creek, 56 adults for Newsome Creek, and 292 adults for Meadow Creek, Selway. The broodstock needs assumes a 50:50 sex ratio. *Sherman Sprague*

2.3.4.2. Trapping operations at NPTH – The adult ladder and trap at Nez Perce Tribal Hatchery will be operated in 2011 to collect spring Chinook adults as a broodstock source for the Meadow Creek program and a backup brood source for the Lolo and Newsome programs. Trapping operations will begin mid-April and continue through July 31st or until broodstock needs are met.

Broodstock selection will be based on existing fin clips, marks, or tags. Only adipose fin clipped and/or CWT fish will be used as broodstock and will be retained at the rate described above. All natural, non-adipose fin clipped, known Idaho Supplementation Studies (ISS), and radio tagged fish will be returned to the Clearwater River and allowed to continue their spawning migration.

An alternative broodstock source for the Meadow Creek, Selway program is to obtain spring Chinook broodstock from other programs. Per agreement with IDFG and USFWS, adults returning to Crooked River, Rapid River, Red River, Powell satellites and Dworshak Hatchery may also be used for broodstock. Up to 458 adults (229 females and 229 males) may be collected at these facilities if necessary to help NPTHC meet full production, if they are available. Preferably these fish would be spawned at IDFG and USFWS facilities and eggs transported to NPTH for incubation and rearing. *Steve Rodgers*

2.3.4.3. Trapping operations at Lolo Creek and Newsome Creek - Trapping operations on Lolo and Newsome creeks usually begin at the end of May, after peak flows are reached. Trapping will continue through September 19th, or until zero fish are trapped for 7 consecutive days. Two weirs will be operated on Lolo Creek, an upper weir (RKM 51) and a lower weir (RKM 21). Pass/keep ratios will be adjusted on a weekly basis dependent on actual captures. The adult weirs will also be used for escapement,

estimating sex composition, age structure, return timing and genetic tissue sampling. Trapped fish will be transported by NPTHC staff from the weir sites to NPTH for holding and sexual maturation. M&E staff may assist with transport of adults from the upper and lower weirs on Lolo Creek when staff is available. *Sherman Sprague*

2.3.4.4. Adult outplanting plans - Only adults and jacks that have not been inoculated may be outplanted. Fish that have been inoculated and are utilized for spawning will be buried on site at NPTH. Please see **Table 7a** and **8b**. *Becky Johnson / Steve Rodgers*

2.3.4.4. Spawning plans – The first sort and spawn will occur as early as August 3rd. Spawning will occur on Tuesday of each week at NPTH. A spawning ratio of 1:1 will be used. Jacks will be limited to five percent of the male contribution. Spawning will continue until the egg take goal is achieved or all females are spawned. Broodstock will be collected and managed to meet egg take goals, while avoiding significantly exceeding those goals. Excess females may be outplanted to avoid significant egg surpluses, pending Tribal, Fish Health and co-manager approval. *Steve Rodgers*

2.3.4.5. Juvenile production –

- The current NPTHC production goals are 625,000 parr/pre-smolts. Distribution of juvenile production is 400,000 parr (Meadow Creek), 150,000 pre-smolts (Lolo Creek), and 75,000 pre-smolts (Newsome Creek).
- Juvenile production destined for remote sites will be held in production room tanks, raceways or NATURES "S" channels at NPTH, and also in tanks at the Sweetwater facility. They are transferred to the acclimation facilities when conditions permit (end of August to the second week of September). Production will be 100% marked with a CWT and sub-release groups will be PIT tagged. *Steve Rodgers*

2.3.4.6. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that are identified at a level of 0.25 OD or higher will be culled. A 150 fish sample (ovarian fluids) will be taken for viral replicating agents. A 60 fish sample (head wedge) will be taken for *Myxobolus cerebralis* analysis. Juveniles will be inspected on a monthly monitoring basis unless diagnostics are necessary. Pre-liberation samples prior to release (60 fish sample). *Marilyn Blair*

2.3.4.7. Communication - A monthly NPTH narrative and fish health report will be completed and submitted to BPA/COTR, NPT Research and Production divisions, IDFG/Clearwater Fish Hatchery and all other interested parties. NPTHC also produces an annual operation plan and annual operation report for BPA and the comanagers. *Steve Rodgers*

3. SUMMER CHINOOK SALMON – *An expected long-term contribution of 5,000-10,000 adults towards the overall Lower Snake River Compensation Plan goal is projected. A long-term broodstock goal of 600 was calculated for the Clearwater Hatchery program. Broodstock needs for Summer Chinook will increase incrementally as the program builds to the full program of 600k to 1.0 mil. full term smolts. The maximum program limit will be*

determined as the rearing parameters are incrementally (200k fish segments) tested by Clearwater Hatchery staff. Additional details are listed in the pertinent sections below. The egg source will be the South Fork of the Salmon River trap operated by McCall Fish Hatchery. Approximately 68 females and 68 males will be required for each 200k full term smolt allotment for the incrementally increase to 600k to 1.0 mil. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 288k green eggs for each increase of 200k smolts at an average of 72% eyed egg-to-smolt survival to meet the adult return goal.

3.1. Broodyear 2009 Summer Chinook

3.1.1.1. Estimated numbers/ planned marking & tagging - Summer Chinook rearing numbers will increase slowly. Year One, (BY 2009) we increased our production numbers using Option 1 200K from Increased Chinook rearing plan. At the end of Year One we would evaluate how well all stages of production adjusted to the increased 200K. Rearing will be limited to Option 1 of 200k FTS until all program recommendation are in place prior to proceeding to Option 2 and an increase to 400k FTS. Implementation of program parameters are essential to assure safe aquaculture procedures are in place to provide disease free/ stress free environment for rearing of Summer Chinook. The following items are program infrastructure and budget adjustments to be in place prior to proceeding to Option 2.: 1) Rearing cost.; 2) Personnel adjustments to cover project workload {see Increased Chinook Plan}; 3) Infrastructure to accommodate workload, staff housing, 2 pond adult facility, vat space for early rearing, safety modifications to Red River adult weir. If no problems arose we would recommend advancing to Option 2. 400K for Year Two. If we did experience aquaculture problems or infrastructure / personnel adjustments were not in place we would recommend repeating Year One until we were able to fix any problems that arose to reduce risk of fish loss or quality of fish health. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

3.1.1.2. Projected Release – In March of 2011 the projected release will be approximately 204,000 full term smolts and will be a direct released from the Lower Crooked River trap site.

3.1.1.3. Fish Health - All females were tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that were identified at a level of 0.25 OD or higher were culled. A 60 fish sample (ovarian fluids) and at 30 kidney/spleen (tissue) samples were taken for viral replicating agents. A 20 fish sample (head wedge) was taken for *Myxobolus cerebralis* analysis. Juveniles will be inspected on a quarterly basis with additional diagnostics on demand. Pre-liberation samples prior to release at satellites (60 fish sample). *Doug Munson*

3.1.1.4. M&E - The fish are pound counted monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken three times during the final rearing cycle; during marking as fish are

moved outside, at the end of October and two weeks prior to outplanting. Fish will be 100% CWT with no ad clip. Seven weeks after marking and prior to release, 100 fish are sampled to determine CWT retention. In February or March 2011, approximately 25,500 Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam and to estimate an adult escapement back to Lower Granite Dam as well as to provide a tool for in-season fisheries management (Table 4). *Jerry McGehee / John Cassinelli*

3.2. Broodyear 2010 Summer Chinook

3.2.1.1. Trapping - Summer Chinook were trapped at the South Fork of the Salmon trap operated by McCall Fish Hatchery. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

3.2.1.2. Spawning – Spawning occurred at the South Fork of the Salmon trap. One or two Clearwater Fish Hatchery staff traveled there and assisted with spawning and disease sampling procedures. They packaged the green eggs for direct transport to the Clearwater Fish Hatchery.

3.2.1.3. Juvenile Production - Summer Chinook rearing numbers will increase slowly. Year One, (BY 2009) we increased our production numbers using Option 1 200K from Increased Chinook rearing plan. At the end of Year One we would evaluate how well all stages of production adjusted to the increased 200K. Rearing will be limited to Option 1 of 200k FTS until all program recommendation are in place prior to proceeding to Option 2 and an increase to 400k FTS. Implementation of program parameters are essential to assure safe aquaculture procedures are in place to provide disease free/ stress free environment for rearing of Summer Chinook. The following items are program infrastructure and budget adjustments to be in place prior to proceeding to Option 2.: 1) Rearing cost.; 2) Personnel adjustments to cover project workload {see Increased Chinook Plan}; 3) Infrastructure to accommodate workload, staff housing, 2 pond adult facility, vat space for early rearing, safety modifications to Red River adult weir. If no problems arose we would recommend advancing to Option 2. 400K for Year Two. If we did experience aquaculture problems or infrastructure / personnel adjustments were not in place we would recommend repeating Year One until we were able to fix any problems that arose to reduce risk of fish loss or quality of fish health. We stayed with Option 1 for year two. *Jerry McGehee*

3.2.1.4. Fish Health - All females were tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that were identified at a level of 0.25 OD or higher were culled. Diagnostics were performed on demand. Pre-liberation samples prior to release at satellites (60 fish sample). *Doug Munson*

3.3. Broodyear 2011 Summer Chinook

3.3.1.1. Trapping - Summer Chinook will be trapped at the South Fork of the Salmon River trap operated by McCall Fish Hatchery. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

3.3.1.2. Spawning - Spawning will occur at the South Fork of the Salmon trap. One or two Clearwater Fish Hatchery staff will travel there and assist with spawning and disease sampling procedures. They will package the green eggs for direct transport to the Clearwater Fish Hatchery. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

3.3.1.3. Juvenile Production - Summer Chinook rearing numbers will increase slowly. Year One, (BY 2009) we increased our production numbers using Option 1 200K from Increased Chinook rearing plan. At the end of Year One we evaluated how well all stages of production adjusted to the increased 200K. Rearing will be limited to Option 1 of 200k FTS until all program recommendation are in place prior to proceeding to Option 2 including an increase to 400k FTS. Implementation of program parameters are essential to assure safe aquaculture procedures are in place to provide disease free/ stress free environment for rearing of summer Chinook. The following items are program infrastructure and budget adjustments to be in place prior to proceeding to Option 2.: 1) Rearing cost.; 2) Personnel adjustments to cover project workload {see Increased Chinook Plan}; 3) Infrastructure to accommodate workload, staff housing, 2 pond adult facility, vat space for early rearing, safety modifications to Red River adult weir. If no problems arose we would recommend advancing to Option 2. 400K for Year Two. If we did experience aquaculture problems or infrastructure / personnel adjustments were not in place we would recommend repeating Year One until we were able to fix any problems that arose to reduce risk of fish loss or quality of fish health. *Jerry McGehee / Cassie Sundquist / Lars Alsager*

3.3.1.4. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that are identified at a level of 0.25 OD or higher will be culled. Diagnostics on demand. Pre-liberation samples prior to release at satellites (60 fish sample). *Doug Munson*

4. **COHO -** *A coho reintroduction program was initiated by the Nez Perce Tribe in 1995. Fish production for this program comes from Eagle Creek NFH and Dworshak and Kooskia NFH. The long-term adult return goal is 14,000 to the Clearwater River subbasin. The broodstock collection goal is 1,200 adults (50% females) returning the Clearwater River. Smolt release goals have ranged as high as 1.1 million, with the the last 5 years at 830,000 smolts annually. Currently, production releases goals are 550,000 smolts reared out-of-basin from Eagle Creek NFH - 275,000 smolts in Lapwai Creek and 275,000 smolts in Clear Creek. Smolts reared at Dworshak NFH and released into Clear Creek range from 280,000 to 300,000 smolts annually being acclimated at Kooskia NFH prior to release.*

4.1 Broodyear 2009 Coho

4.1.1. Dworshak

4.1.1.1. Production status – There were 322,466 fish on hand (17,430 pounds, 18.5 fpp) at Dworshak as of January 1st, 2011. *Mike Bisbee*

4.1.1.2. Projected transfer date/acclimation period at Kooskia – Smolts will be transferred to Kooskia NFH during the first week of March for a 4-5 week acclimation. *Mike Bisbee*

4.1.1.3. Numbers/dates/marks & tags - 61,594 fingerling Coho were marked with a CWT (no AD clip) on July 13th, 2010. Prior to release from Kooskia 5,000 fish will be PIT tagged. PIT tags will be provided by FWS through Mitchell Act funding. (**Table 8**) *Mike Bisbee*

4.1.1.4. Fish health – These fish had problems with gas bubble disease during the summer months. Fish are sampled monthly and prior to liberation; a 60 fish sample will be taken and assayed for virus, bacteria, and parasites. *Marilyn Blair*

4.1.1.5. Juvenile M&E – marks used are PIT and CWT tags and some CWT and adipose clips in combination with CWT's. These marks are intended to provide the following information;

- Juvenile survival and emigration timing to Lower Granite Dam.
- Smolt-to-adult survival and adult return timing based on counts at Lower Granite Dam, ladder counts at Dworshak and Kooskia hatcheries. *Mike Bisbee*

4.1.2. Transfers from Eagle Creek NFH

4.1.2.1. Projected release - Approximately 383,000 smolts reared at Eagle Creek NFH will be transported the Clearwater subbasin in early March. This production is short of the 550,000 smolt production goal as a result of egg losses during transport from Kooskia to Eagle Creek and new egg/fish enumeration equipment at Eagle Creek NFH. The Lapwai Creek release group of 172,000 smolts will be direct released and the Clear Creek release group of 211.000 smolts will be acclimated at Kooskia NFH if the rearing space is available as it was for the 2010 release group. *Mike Bisbee*

4.1.2.2. Numbers/dates/marks & tags - Coho were marked – 30,000 CWT/Ad and 30,000 CWT only per each release group at Eagle Creek. Prior to transfer from Eagle Creek 10,000 fish will be PIT tagged – 5,000 for release into Clear Creek and 5,000 for release into Lapwai Creek. PIT tags will be provided by FWS through Mitchell Act funding (**Table 8**). *Mike Bisbee*

4.1.2.3. Fish health – Disease history for this broodyear of fish is completed at Lower Columbia River Fish Health Center. All fish are certified disease free for pathogens tested at that point in time. *Marilyn Blair*

4.1.2.4. M&E

- Smolt-to-adult survival and adult return timing based on counts at Lower Granite Dam.
- Juvenile survival to Lower Granite Dam *Mike Bisbee*

4.2. Broodyear 2010 Coho

4.2.1. Dworshak

4.2.1.1. Production status - Coho recognized at Lower Granite Dam totaled 1,509 adults and 393 jacks in 2010. A total of 936 Coho salmon broodstock were collected consisting of 306 females, 267 males, and 363 jacks. Broodstock collections occurred at Lapwai Creek weir – 384 fish, at Dworshak NFH –

132 fish, and at Kooskia NFH – 420 fish. Fish excess to broodstock needs was 63 adults and 346 jacks. Fish released above the weir in Lapwai Creek were 63 adults and 119 jacks, an additional 177 jacks were outplanted in the South Fork Clearwater and 50 jacks in the North Fork Clearwater River. A total of 236 females were spawned with 224 males. Fourteen females were culled; two due to BKD and 12 due to high pre-eye up mortality. Eyed eggs from 222 Clearwater stock females were spawned and enumerated using a Van Gaalen egg sorter; percent eye-up was 89.12% and enumerated eggs totaled 616,805. *Mike Bisbee*

4.2.1.2. Projected production - We anticipate Dworshak production will be 350,000 smolts reared through spring 2011. Coho juveniles will be inventoried in the spring and summer of 2011 to ensure that no more than 300,000 fish are reared in the space allotted at Dworshak NFH (System III, Burrows Ponds). Excess Coho parr will be removed and outplanted to designated outplant streams (**Table 8**). *Mike Bisbee*

4.2.1.3. Fish health – Every adult female was sampled individually for BKD with ELISA; values above the cutoff (.25) values resulted in two females' eggs culled. Approximately 1.4% of the adults sampled were positive for IHNV. An additional 60 tissue samples were taken for virus, bacteria, *M. cerebralis* and *C. shasta.* Juvenile fish will be sampled monthly and prior to liberation. We suggest treating with Florfenicol prior to transfer to Kooskia if Bacterial Coldwater Disease is present, to help guard against post-transport, stress induced mortality from Bacterial Coldwater Disease. *Marilyn Blair*

4.2.1.4. M&E - Current plans are to CWT 60,000 presmolts in July, 2011(**Table 9**). If FWS, through Mitchell Act, is able to provide PIT tags, then 5,000 smolts will be tagged in February 2012. Juvenile survival and emigration timing to Lower Granite Dam is assessed through PIT tag detection. CWT recovery helps determing smolt-to-adult survival, and adult return timing is based on adult counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia hatcheries. *Mike Bisbee*

4.2.2. Transfers from Eagle Creek NFH

4.2.2.1. Projected release - Smolts reared at Eagle Creek NFH will be released into Clear and Lapwai Creeks in mid-March 2012. Approximately 550,000 (275,000 each stream) will be acclimated or direct stream released. *Mike Bisbee*

4.2.2.2. Fish health – Disease history for this broodyear of fish is completed at Lower Columbia River Fish Health Center. All fish are certified disease free for pathogens tested at that point in time. *Marilyn Blair*

4.2.2.3. M&E – Marking of fish will occur at Eagle Creek Hatchery with 30,000 CWT only mark per each release group and 30,000 CWT/Ad clip per each release group (Lapwai and Clear Creek). In addition, the Eagle Creek release groups will be marked with 5,000 PIT tags each for a total of 10,000 PIT tags (Table 9). These marks estimate the following;

- Juvenile survival to Lower Granite Dam based on PIT tag detection.

- Adult return timing based on PIT tags and counts at Lower Granite Dam.
- Smolt-to-adult survival based on PIT tags and the number of juveniles released and adult returns over Lower Granite Dam. *Mike Bisbee*

4.3. Broodyear 2011 Coho - *A primary program objective is to develop a local Clearwater River Coho stock. To accomplish this, adult Coho returning to the Clearwater River of the Snake River basin are the priority for use as broodstock. Fish may be collected at Dworshak NFH, Kooskia NFH, Lapwai Creek, Lyons Ferry FH, and/or Nez Perce Tribal Hatchery; however,of these locations, fish collected at Kooskia NFH, Dworshak NFH and Lapwai Creek will be prioritized for broodstock . Approximately 1,200 adults are necessary to meet broodstock goals.*

4.3.1. Kooskia

4.3.1.1. Weir/Trap operation - Weir operations will start October 1, 2011 to trap adult Coho at Lapwai Creek and Kooskia NFH. *Mike Bisbee*.

4.3.1.2. Adult transfers - Depending on adult return projection and estimated broodstock collection adult coho trapped at Lapwai weir or other sites will be transported to Kooskia NFH for holding and spawning. Adult hatchery steelhead incidentally trapped at the Kooskia weir will be transported to the S.F. Clearwater and released by the NPT. *Mike Bisbee*

4.3.1.3. Adult outplanting – When coho broodstock goals have been met, surplus adults collected will be outplanted to Lapwai Creek, Lolo Creek, and El Dorado Creek or released back into the North Fork or South Fork Clearwater rivers. *Mike Bisbee*

4.3.1.4. Coho spawning – All coho spawning will take place at Kooskia NFH. The broodstock goal is to collect and spawn 550 females to provide eggs for both the Dworshak and the Eagle Creek programs. Eggs for the Dworshak/Kooskia group will be incubated and early reared at Kooskia and later transferred to Dworshak. Eggs for the Eagle Creek group will be incubated at Dworshak to eye-up stage and transferred to Eagle Creek NFH for final rearing. *Mike Bisbee*

4.3.1.5. Fish Health **–** The Idaho Fish Health Center will collect the following samples from the returning adult Coho salmon, 60 head wedges, 60 spleens, 150 Ovarian Fluid, 100% kidneys for BKD testing by ELISA, and a small amount of intestine samples. Bacteriology will be performed from viral sampling (spleens). 100% sampling will be conducted on ovarian fluid from females whose eggs are destined for Eagle Creek. These samples will be two-pooled. *Marilyn Blair*

4.3.1.6. Adult carcasses – All adult coho carcasses will be out planted into Clear Creek, Lapwai Creek and the main stem Clearwater River following spawning. *Mike Bisbee*

4.3.1.7. Juvenile M&E – NPT have obtained Mitchell Act funds to hire a biologist to oversee and implement Coho Monitoring & Evaluation activities in 2011. The following M&E will occur with the potential to evaluate more information depending on staff support.

- Smolt-to-adult survival based on weir monitoring in Clear Creek.
- Smolt-to-adult survival and adult return timing shall be based on PIT tag information and counts at Lower Granite Dam
- Redd surveys in Clear Creek – may be limited.
- Broodstock counts at Dworshak and Kooskia NFH, Lapwai Creek, Lyons Ferry Hatchery, Nez Perce Tribal Hatchery. *Mike Bisbee*

4.3.2. Dworshak

4.3.2.1. Ladder operation - The Dworshak ladder will be operated the first week of October in 2011 to trap steelhead at Dworshak NFH. Adult coho trapped during this time will be transported to Kooskia for broodstock. Depending on the projected return, the NPT may request that the ladder be operated several additional times to collect coho broodstock as needed to meet production goals. *Mike Bisbee*

4.3.2.2. Adult transfers - Adult coho trapped as broodstock will be transported by the NPT to Kooskia and held until spawning occurs. *Mike Bisbee*

4.3.2.3. Adult outplanting – Whenever adults surplus to broodstock needs occur, these adults will be outplanted to North Fork or mainstem Clearwater Rivers, Lapwai Creek, Lolo Creek, and El Dorado Creek. *Mike Bisbee*

4.3.2.4. Eagle Creek NFH – When Clearwater broodstock can provide eggs for the Eagle Creek smolt program, eggs and milt will be collected at Kooskia NFH and transported to Dworshak for delayed fertilization. These eggs will incubate at Dworshak to eye-up stage and then transferred to Eagle Creek NFH in late December/early January for final rearing. *Mike Bisbee*

4.3.2.5. Juvenile M&E –

- To be determined.
- Smolt-to-adult survival and adult return timing shall be based on PIT tag information and counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia NFH, Lapwai Creek, Lyons Ferry Hatchery, Nez Perce Tribal Hatchery. *Mike Bisbee*

4.3.3. Lapwai Creek

4.3.3.1. Weir operation – A picket weir will be installed and become operable starting October 1, 2011 to trap coho broodstock near the train bridge and the mouth of Lapwai Creek. Pass/keep ratios will be adjusted on a weekly basis dependent on the projected return and actual captures. The adult weir will also be used for escapement, estimating sex composition, age structure and return timing. *Mike Bisbee*

4.3.3.2. Adult transfers - Adult steelhead trapped during operation of the Lapwai Creek coho weir will be passed above the weir. Adult fall Chinook salmon trapped during operation of the weir will be transported and released back into the mainstem Clearwater River. *Mike Bisbee*

4.3.3.3. Juvenile M&E –

- Smolt-to-adult survival based on weir monitoring in Lapwai Creek.
- Limited redd surveys may occur in Lapwai Creek.
- Smolt-to-adult survival and adult return timing shall be based on PIT tag information and counts at Lower Granite Dam and ladder counts at

Dworshak and Kooskia NFH, Lapwai Creek, Lyons Ferry Hatchery, Nez Perce Tribal Hatchery. *Mike Bisbee*

4.3.3.4. Communication - Clearwater Coho Project Leader produces monthly reports for coordination between hatchery management and staff communication. Semi-annual and annual reports are a contract requirement to the CRITFC and NOAA funding entities. *Mike Bisbee*

5. FALL CHINOOK SALMON - *Fall Chinook salmon production in the Clearwater River occurs through two programs – Lower Snake River Compensation Plan/Fall Chinook Acclimation Project and Nez Perce Tribal Hatchery.*

5.1. Broodyear 2009 Fall Chinook

5.1.1. NPT Fall Chinook Acclimation Project – Big Canyon Facility - *The Big Canyon Acclimation facility is a portable acclimation setup designed and operated for acclimation and release of Snake River fall Chinook salmon that are reared at Lyons Ferry Hatchery. Big Canyon facility is operated by the Nez Perce Tribe as part of the Fall Chinook Acclimation Project (FCAP) funded by BPA. The facility has capacity to acclimate 150,000 yearlings and 500,000 subyearlings. The facility is operated in conjunction with two other acclimation facilities on the Snake River in an effort to restore ESA listed Snake River fall Chinook salmon and achieve the LSRCP mitigation goal of 18,300 adults to the project area*

5.1.1.1. Production status – Approximately 155,000 yearlings are being reared at Lyons Ferry Hatchery for transfer to the Big Canyon acclimation facility on March 2,3, 4, 2011. *Bruce McLeod / Mike Key*

5.1.1.2. Projected release – Target release will be 150,000 yearlings at 10 fpp on April 14, 2011. Fish are 70,000 CWT and ad clipped and 80,000 CWT only. 19,000 will be PIT tagged (see M&E section below). (**Table 10**) *Bruce McLeod / Mike Key*

5.1.1.3. Fish health - Import permit sampling was done on Jan 20, 2010 and results were sent to Eagle Fish health Lab and Bruce McLeod. Monitoring samples for BKD will be taken weekly and a 60 fish sample will be collected and assayed prior to release from each site. *Marilyn Blair*

5.1.1.4. M&E - Yearling release groups will be sampled for length and weight at time of release. A subsample of approximately 600 fish are collected as the fish are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 21 days after tagging/marking is completed. We will PIT tag 4,000 yearlings to estimate survival, migration rate and timing through the FCRPS. An additional 15,000 PIT tags for the transportation evaluation study – PIT tagging will occur at Lyons Ferry Hatchery. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawner carcass sampling in the Clearwater subbasin will be conducted by NPTH M&E personnel. Coded wire tags will provide SAR data. *Bill Arnsberg*

5.1.1.5. Communication - O&M and M&E quarterly and annual reports to BPA.

5.2. Broodyear 2010 Fall Chinook

5.2.1. NPT – Fall Chinook Acclimation Project – Big Canyon Facility

5.2.1.1. Production status – Approximately 500,000 subyearlings are being reared at Lyons Ferry Hatchery for transfer to the Big Canyon acclimation facility on May 3, 4, 5, 2011. *Bruce McLeod / Mike Key*

5.2.1.2. Projected release – Target release is 500,000 subyearlings at 75-50 fpp on May 24, 2011. A group of 100,000 fish are CWT / ad-clipped and 100,000 CWT only for evaluation – the balance of fish are unmarked. 41,051 will be PIT tagged. (**Table 10**) *Bruce McLeod / Mike Key*

5.2.1.3. Fish health - Import permit sampling will be done in March/April. A 60 fish sample will be collected and assayed prior to release from each site. *Marilyn Blair*

5.2.1.4. Juvenile M&E – Subyearling release groups will be sampled for length and weight at time of release. A subsample of approximately 1,000 fish is collected as they are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 21 days after tagging/marking is completed. We will PIT tag 20,801 subyearlings to estimate survival, migration rate and timing through the FCRPS. An additional 17,720 will be PIT tagged for the transportation evaluation study. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawner carcass sampling in the Clearwater subbasin will be conducted by NPTH M&E personnel. Coded wire tags will provide SAR data. *Bill Arnsberg*

5.2.1.5. Communication - O&M and M&E quarterly and annual reports to BPA.

5.2.2. Nez Perce Tribal Hatchery

Hatchery Program	Broodstock Needs	Production Goal	Adult Return Goal
NPTH – onsite	360	500,000	2,290
NPTH – Lapwai Creek	360	500,000	
NPTH – Selway River	144	200,000	
NPTH – SF Clearwater R.	144	200,000	
NPTH Total	**1,008**	**1,400,000**	

5.2.2.1. Production status - As of December 31, 2010, there are 1,817,875 fall Chinook eggs/fry on hand at NPTH. *Steve Rodgers*

5.2.2.2. Projected release - Anticipated release: 1.4 million sub-yearlings.

NPTH: A release of 500,000 sub-yearlings into the Clearwater River at 50 fpp (9.1 g) is planned. As identified in the U.S. vs. Oregon Management Agreement, 200,000 fish will be marked with a CWT, and 100,000 fish will be marked with a CWT and an adipose fin clip (AD), and 200,000 will be unmarked and untagged. Fish are marked and tagged by NPTH M&E employees during transfer to two earthen ponds from the production tanks or from two raceways, after reaching a target mark size of 160 fpp. 3,000 fish are PIT tagged for standard

outmigration monitoring with 850 of those also sampled for DNA in cooperation with NOAA's Parentage Study. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. A volitional release begins in early June, unless river water temperatures warrant an earlier release. At the start of the scheduled volitional release, hatchery employees take lengths and weights on a minimum of 500 fish (250 from each pond). Scheduled final release date from NPTH is June 15, 2011. Hatchery or river conditions may warrant a shortened or no volitional release period.

North Lapwai Valley: A release of 500,000 sub-yearlings at 50 fpp (9.1 g) into the Clearwater River is scheduled for mid-May, 2011. Fish slated for final acclimation and release from North Lapwai Valley AF will be marked at either NPTH or at NLV, depending on water and rearing space demands at NPTH. Per the U.S. vs. Oregon Management Agreement, this group will be comprised of 200,000 CWT only fish, 100,000 AD and CWT fish, and 200,000 unmarked and untagged fish. Prior to release, 3,000 fish will be PIT tagged for outmigration monitoring with 850 of those also sampled for DNA in cooperation with NOAA's Parentage Study. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays will be performed. Hatchery staff will take lengths and weights on a minimum of 500 fish. Although the facility was designed for release in mid-June, warming water temperatures and decreasing flows in the creek usually warrant earlier release to avoid disease outbreaks. Employees living at the facility monitor both water temperatures and dissolved oxygen (DO) levels daily, and fish are released when water temperatures reach 63^{o} F (17.2^{o} C) and/or DO levels drop significantly. Target release date is May 10, 2011 with a seven day volitional release period beforehand.

- Cedar Flats: A release of 200,000 sub-yearlings into the Selway River at 50 fpp (9.1 grams) is planned. Transfer of the fish occurs in mid-April to early May, 2011. Per the U.S. vs. Oregon Management Agreement, they will be 100% CWT'd, and half the release group will also have an AD clip. Up to 14,706 fish will be marked with a PIT tag. Of those, 3,000 are for standard outmigration monitoring by NPT M&E biologists with 650 of those also sampled for DNA in cooperation with NOAA's Parentage Study, and the remaining are part of the ACOE transportation study (pending approval and funding). Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. Hatchery staff will take lengths and weights on a minimum of 500 fish just before release. Scheduled final release date from Cedar Flats AF is June 14, 2011.
- Lukes Gulch: A release of 200,000 sub-yearlings into the S. F. Clearwater River at 50 fpp (9.1 g) is planned. Transfer of the fish occurs

in mid April to early May. Per the U.S. vs. Oregon Management Agreement, they will be 100% CWT'd, and half the release group will also have an AD clip. Prior to release, up to 14,706 fish will be marked with a PIT tag. Of those, 3,000 are for standard outmigration monitoring by NPT M&E biologists with 650 of those also sampled for DNA in cooperation with NOAA's Parentage Study, and the remaining are part of the COE transportation study (pending approval and funding). Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. Hatchery staff will take lengths and weights on a minimum of 500 fish just before release. Scheduled final release date from Luke's Gulch AF is June 15, 2011. (**Table 10**) *Steve Rodgers*

5.2.2.3. Fish health – Kidney samples were assayed by ELISA on all spawned females; eggs from 7 females were culled due to ELISA OD's above the cut-off level(.25). 150 ovarian fluid samples, 60 tissues samples and 60 cranial samples were taken for assay. IHNV was found in 34.6 % of samples tested to date. 60 fish sample will be collected and assayed prior to release. *Marilyn Blair*

5.2.2.4. M&E

- Scan all fish for CWT. Initial tag retention and tagging mortality estimated. Estimate final CWT retention rates 21 days or more after tagging.
- PIT survival studies- PIT tag 3,000 of each release group for survival estimates, growth rates, and migration timing.
- The Luke's Gulch and Cedar Flats release groups may also include 11,706 PIT tags each as part of the ACOE transportation study, in addition to the standard 3,000 PIT tags.
- Obtain a total of 3,000 DNA juvenile upper caudal fin clip samples in cooperation with NOAA's Parentage Study.
- Redd surveys and carcass collection. Scales and genetic samples taken, hatchery/wild determination, scan for PIT tags and CWTs, along with all other biological information.
- Volunteers to NPTH and fish hauled from Lower Granite Dam will be scanned for PIT tags and CWTs and scales and genetics will be taken on all spawned fish and mortalities, along with all other biological information. *Bill Arnsberg / Jay Hesse*

5.2.2.5. Communication - NPTHC produces monthly production and pathology reports, and an annual operation plan and annual operation report for BPA and the comanagers. M&E produces quarterly and annual reports to BPA. *Steve Rodgers*

5.2.3. Dworshak NFH

5.2.3.1. Transportation Study – Fall Chinook salmon were temporarily reared at Dworshak NFH in 2005, 2006, 2008, 2009, and 2010 for the transportation study. For 2011 roughly 328,000 fertilized eggs will be transported from Lyons Ferry Hatchery to Umatilla Hatcheries. Of these, 70% are being incubated for ponding in February 2011 and 30% are being

incubated for ponding in April 2011. After Dworshak spring Chinook salmon are released in early to mid-April, the fall Chinook fry will be disease tested and then transferred to Dworshak NFH for rearing to approximate the early life history of natural Snake River (the 70% ponded in February) and Clearwater River (the 30% ponded in April) fall Chinook salmon. The Snake River "surrogate" subyearlings will be reared to 65-70 mm for PIT tagging and release from mid-May to early June. The Clearwater River surrogates will be reared to 65-70 mm for release from mid-June to earl July. Prior to release, disease testing will be conducted and the PIT-tag codes will be loaded into the separation-by-code systems at Lower Granite, Little Goose, Lower Monumental, and McNary dams. This will provide two groups of fish whose treatment at these four dams will differ to represent two different management strategies: transportation with summer spill and bypass with summer spill. Upon adult return, the smolt-to-adult return rates will be compared to determine if fall Chinook salmon should be transported or bypassed when summer spill is implemented. The transportation study duration is currently planned through 2011. *Howard Burge / Jay Hesse*

5.3. Brood year 2011 Fall Chinook

5.3.1. Adult collection - Snake River Fall Chinook adults will be collected at Lower Granite Dam (LWG) and transported to NPTH, in accordance with the *U.S. vs. Oregon* Management Agreement. Additionally, adult fall Chinook may enter the fish ladder and be trapped at NPTH. Activities involving trapping and collection of adult FCS for broodstock were covered under ESA Section 10 Permit No. 1530 which expired in December 2010. WDFW, NPT, and IDFG are working with NOAA Fisheries on renewal of ESA coverage through HGMP consultation which will hopefully be completed by August 18, 2011.

5.3.1.1. Lower Granite Dam - Adult FCS will be collected at LGR beginning the last week in August or when water temperatures are below 70º F (22.2º C). Trapping at LGR will continue throughout the run and is anticipated to end by late November or early December. FCS are collected in the trap as a sub-sample of the returning run. The sub-sample rate for 2011 has not been set, and once agreed to may change mid-season based on actual captures. All females trapped at LGR will be injected with erythromycin and oxytetracycline during the sorting process there. Males less than 75 cm (mini-jacks) are not transported to NPTH. Fish transported to NPTH are usually placed in the north holding pond, but may also be placed in the south holding pond if densities become a concern. Every effort is made to ensure mixing of fish between the two trapping locations (LGR and the NPTH trap) is avoided, and NPTH swim-ins are marked with a right operculum V-notch to differentiate them from the LGR fish. WDFW and NPT have cooperatively developed a transportation schedule for adults trapped at LGR. The goal of NPTH is to receive 30% of the females trapped and LFH to receive 70%. This schedule will be modified as needed to ensure equitable distribution of fish between the two programs.

A portion of known LFH origin and unknown origin hatchery FCS will be transported from LGR to NPTH for holding and spawning. *Steve Rodgers, Becky Johnson*

5.3.1.2. NPTH - There will be weekly in-season updates on LGR adult hauled numbers and an assessment of actual FCS adults counted at LGR with updated run forecasts to determine if and when the adult ladder and trap may be operated at NPTH to meet full production. Trapping at NPTH typically occurs in September – November. Volunteers to NPTH are typically held in the south adult holding raceway. The ladder will be closed when broodstock needs are met. Trapped adult females will be injected with erythromycin prior to the first spawning. They are also marked with a right operculum V-notch to differentiate them from LGR trapped fish. Additionally, all adults will receive formalin treatments three times per week to control fungus and decrease pre-spawning mortality. NPTH targets trapping only enough adults to meet program goals from both LGR and the NPTH ladder. Adults excess to broodstock and not needed for coded-wire tag recovery, tribal subsistence, food banks, research or other needs, will be outplanted for supplementation. The NPT is developing a Clearwater Basin FCS adult outplant plan for discussion with co-managers in 2011. Until that plan is approved outplanting of excess adult FCS will be coordinated on a seasonal basis with IDFG and FWS. No injected or inoculated adults will be outplanted, and instead will be buried on site at NPTH. *Steve Rodgers, Becky Johnson*

5.3.1.3. Spawning plans – Spawning at NPTH will occur every Tuesday beginning on October 18th, and continue until program egg-take goals are met, usually by early December. Spawning may also occur on Wednesdays to avoid extremely long days during larger egg takes. Hatchery staff will ensure M&E employees are aware if Wednesday spawning is necessary. Out-of-Snake River Basin adults, identified as "strays" by CWT or PIT tag may be culled or transferred to lower river hatcheries to meet production goals. However, to meet NPTH production, strays may be retained at a rate not to exceed 5%. Mating will be a 1 x 1 cross (1 female: 1 male). No fish less than 75 cm will be used for spawning. Natural Snake River fish will be incorporated into the broodstock at a target rate of up to 30%, provided that this number does not exceed 20% of the natural origin population. Scale pattern data will not be used at NPTH in the culling of eggs. In mid November, Gonadotropin Releasing Hormone (sGnRHa) may be used on remaining un-spawned LGR females to facilitate maturation. Adults from LGR that have CWT's and are excess to broodstock needs will be sacrificed to recover the wire for run-reconstruction purposes. Adults from LGR without wire will have scale samples taken before they are released into Clearwater Basin streams. Fish held at NPTH will have been treated with formalin so if a fishery is occurring in the Clearwater Basin, these fish may be outplanted into closed waters, and/or marked differentially for easy identification by anglers. However, no inoculated or injected fish will be outplanted. Any

action of this type will be coordinated with the NPT Fish and Wildlife Commission and the comanagers. These fish may also be spawned to backfill for LFH if necessary. Adults and jacks trapped at NPTH in excess to broodstock needs may be returned to the river to spawn naturally, if they have not been injected or innoculated. Every adult female will be sampled individually for BKD using enzyme-linked immunosorbant assay (ELISA). Up to 150 ovarian fluid samples (3 fish pools) will be sampled for viruses. An additional 60 tissue samples will be taken for bacteria assays, and sampled for Myxobolus cerebralis. Samples will be collected by NPTHC staff and delivered to IFHC. Whenever possible, eggs from early spawned females will be used for the Luke's Gulch AF and Cedar Flats AF programs, to support an early returning run to the S.F. Clearwater and Selway Rivers. However, the Clearwater River direct release from NPTH is the highest priority in the event of an egg shortage, and that goal will always be met before either the Luke's Gulch or Cedar Flats acclimated programs. The intent of the fall Chinook program is to take eggs across the entire run, and build release groups represented by multiple takes whenever possible. Chinook salmon carcasses will be returned to free-flowing reaches of the Clearwater River for nutrient enhancement, if they have not been injected or innoculated. Broodstock will be collected and managed to meet egg take goals, while avoiding significantly exceeding those goals. Excess females may be outplanted to avoid significant egg surpluses, pending Tribal, Fish Health and co-manager approval. *Steve Rodgers*

5.3.1.4. Egg Incubation – Fertilized eggs will be water hardened for 30 minutes in 100 parts per million iodophore and placed in Heath trays for incubation. At between 550 and 620 temperature units (TU's) eyed eggs will be shocked; machine sorted the following day and transferred back into Heath trays to hatch. The eggs from females with a high BKD ELISA value may be culled. At swim-up, the fish will be transferred to production room tanks at ~1,600 fpp (0.30 grams). Egg transfers from Lyons Ferry Hatchery may occur for brood year 2011 (but are not likely) depending on the broodstock availability for NPTH and Lyons Ferry Hatchery. *Becky Johnson, Steve Rodgers*

5.3.1.5. Adult M&E

- Redd surveys and carcass collection. Scales and genetic samples taken, hatchery/wild determination, scan for PIT tags and CWTs, along with all other biological information.
- Volunteers to NPTH and fish hauled from Lower Granite Dam will be scanned for PIT tags and CWTs and scales and genetics will be taken on all spawned fish and mortalities, along with all other biological information. *Bill Arnsberg, Jay Hesse*

5.3.1.6. Fish health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples (3 pool) will be sampled for viruses. An additional 60 tissue samples will be taken for virus, bacteria and *Myxobolus cerebralis*. Brood fish health samples will be taken by NPT staff and delivered to Idaho Fish Health Center personnel for

analysis. Eggs from fish with a high BKD titer over the .250 ELISA O.D. value will be culled. *Marilyn Blair*

5.3.1.7. Communication - NPTH produces monthly production and pathology reports, and both an annual operation plan and annual operation report for BPA and the co-managers. Fish Research produces quarterly and annual reports to BPA. *Steve Rodgers*

6. RAINBOW TROUT

6.1. USFWS Program

6.1.1. Dworshak Kids' Fishing Day

6.1.1.1. Production status - BY10: Dworshak will rear triploid RBT from Troutlodge Hatchery, Sumner, WA, for the Kids' Fishing Day. On January 1, 2011, there were 8,738 triploid rainbows at Dworshak. The rainbow trout are currently being reared in one Burrow's pond in System III. These trout should be close to 10 inches in length by Kid's Fishing Day, May 14, 2011. *Thomas Trock*

6.1.1.2. Production status – BY11: Dworshak will purchase approximately 2,000 triploid RBT from Troutlodge Hatchery, Sumner, WA for its 2012 Kid's Fishing Day program. These fish will be transported by hatchery staff and all fish will be directly released into the Tunnel's Pond. *Thomas Trock*

6.1.1.3. Excess outplanting -Approximately 2,500 triploid rainbow trout will be stocked in Tunnel's Pond for the Kid's Fishing Day. These fish will likely need to be stocked in late March to accommodate maintenance activities at the Dworshak Fish Hatchery scheduled for April 1, 2011. The Idaho Dept. of Fish and Game will also receive approximately 2,000 of these fish for stocking state waters and the Nez Perce Tribe will stock the remaining fish in various impoundments determined by Tod Sween. *Mark Drobish*

6.2. IDFG Programs –

6.2.1. Dworshak Reservoir

Nampa Fish Hatchery plans on stocking 50,000 sterile triploid rainbows into Dworshak Reservoir, May to early June. Since 1997 Hagerman NFH has raised rainbows for stocking into Southern Idaho reservoirs and IDFG reciprocates by stocking Dworshak Reservoir. *Jerry McGehee* / *Howard Burge*

6.2.2. Clearwater Basin

In past years IDFG annually stocked approximately 50,000 (3,300 lbs) of Kamloops rainbow trout from Lyons Ferry Hatchery into the Clearwater River system. Through a 2009 agreement between NPT and IDFG, 1,650 lbs. (1 fish/lb) will be released into Tunnel Pond, and for 2011 also Mud Springs, and Talmaks Ponds (due to maintenance activities at Dworshak NFH accelerating the stocking schedule this year). The NPT will transport the fish destined for the Tribal Ponds. The remaining 1,650 lbs. (3 fish/lb) will be released into Lewiston Levee Ponds. In 2011 IDFG will stock the 1650 lbs. of rainbows (3 fish/lb) into Moose Creek Reservoir. In exchange the Clearwater Hatchery will stock the 1650 lbs. of rainbows into Lewiston Levee Ponds over the months of April, May, June, July, and October to insure a constant

supply of fish is distributed to anglers. IDFG will transport the Lewiston Levee Pond fish.

This program will be evaluated for 5 years to determine if it's meeting the needs of the public in mitigating for lost fisheries. This program is funded by the Lower Snake River Compensation Plan and the Dingle-Johnson Program to compensate for dam related losses. *Joe Dupont / Becky Johnson*

The Clearwater Fish Hatchery regional rainbow program redistributes 100,000 state reared trout. There are 25+ plant sites, requiring 100+ trips, and stocking occurs from April to October. *Jerry McGehee*

7. PACIFIC LAMPREY - *The purpose of this stop gap effort by NPT Fisheries is to avoid local extirpation in the Snake River Basin and maintain a population of ammocoetes that serve as a source of pheromone attractants drawing adults upstream to spawn in the abundant habitat in this region, thereby continuing a presence in the Snake River Basin until upstream adult and downstream juvenile passage problems are identified and corrected, and healthy, harvestable populations are restored. The Nez Perce Tribe believes it is imperative to restore this important component of the ecosystem and retain cultural values.*

7.1. NPT Program Nez Perce Tribal Hatchery - On November 30, 2010 NPT Fisheries staff collected 33 adult Pacific lamprey from the Smolt Monitoring Facility at John Day Dam on the mainstem Columbia River during fishway dewatering operations conducted by the US Army Corps of Engineers. Another 9 fish were salvaged from The Dalles Dam collection channel on December 4, 2010. All 42 lamprey were transported to the Nez Perce Tribe Hatchery at Cherry Lane, injected with Oxytetracycline as a prophylaxis against furunculosis, and held over the winter months. NPT plans to outplant these adults during May 2011 in Lolo, Orofino, and Newsome creeks in Idaho and Asotin Creek in Washington to spawn naturally. Prior to release a subset of these fish may be tagged for telemetric tracking (in collaboration with USFWS). Genetic samples are collected by NPT staff for later analysis.

For the fall of 2011 the NPT Columbia Basin Pacific Lamprey Translocation Plan again targets up to 500 adults for collection. NPT Fisheries will collect any lamprey salvaged during fishway dewatering operations in November and December 2011 at John Day and The Dalles dams. Due to the very low recent adult passage counts in the Columbia as well as the downward trend in numbers of salvaged fish, other collection options are being considered. *Tod Sween*

8. INFORMATION and EDUCATION

8.1. I&E Programs - The Dworshak Complex will provide eggs to approximately 12 schools in support of the Hatchery in the Classroom project. Either with their own equipment or hatchery-loaned, classes from 4^{th} – 12^{th} gr. raise either steelhead or Chinook from eyed egg to fry and release them in May.

Egg and fish requests for 2010 are:

- Approximately 850 steelhead and 300 spring Chinook eyed eggs for Hatchery in the Classroom projects (13 schools).
- Approximately 200 fry (only needed in the event of high mortality with a Hatchery in the Classroom project).
- Approximately 10 adult steelhead carcasses for dissection and anatomy studies in elementary and high schools. *Mark Drobish / Ed Larson*

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